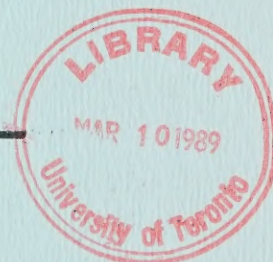




Ontario

# ENVIRONMENTAL ASSESSMENT BOARD



VOLUME: 76

DATE: Tuesday, February 28th, 1989

BEFORE:  
M.I. JEFFERY, Q.C., Chairman  
E. MARTEL, Member  
A. KOVEN, Member

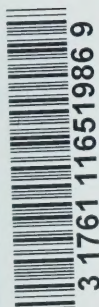
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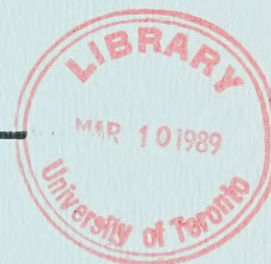


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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL  
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR  
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental  
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental  
Assessment for Timber Management on Crown  
Lands in Ontario;

- and -

IN THE MATTER of an Order-in-Council  
(O.C. 2449/87) authorizing the  
Environmental Assessment Board to  
administer a funding program, in  
connection with the environmental  
assessment hearing with respect to the  
Timber Management Class  
Environmental Assessment, and to  
distribute funds to qualified  
participants.

-----  
Hearing held at the Ramada Prince Arthur  
Hotel, 17 North Cumberland St., Thunder  
Bay, Ontario, on Tuesday, February 28th,  
1989, commencing at 9:00 a.m.

-----  
VOLUME 76

BEFORE:

MR. MICHAEL I. JEFFERY, Q.C.	Chairman
MR. ELIE MARTEL	Member
MRS. ANNE KOVEN	Member





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(iii)

APPEARANCES: (Cont'd)

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TOURISM ASSOCIATION





(iv)

I N D E X   O F   P R O C E E D I N G S

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I N D E X   O F   E X H I B I T S

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430C	Portion of Timber Use Capability Map.	12798
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431A	Slide depicting general view of white pine stand (Partridge Lake).	12800
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432	Map entitled: National Topographic Map, Haliburton, 31E-2 at the scale of 1:50,000.	12812





1 ---Upon commencing at 9:05 a.m.

2 THE CHAIRMAN: Good morning. Please be  
3 seated.

4 Ms. Seaborn?

5 MS. SEABORN: Mr. Chairman, just before I  
6 begin, two things. First of all, there were a couple  
7 of things that I had asked last week for Mr. Freidin to  
8 provide me with particular information. The issue was  
9 with respect to our Interrogatory Question 7(a) and Mr.  
10 Freidin has advised me that he can provide a response  
11 now.

12 The second issue was with respect to the  
13 white pine picture that you will recall that I had  
14 asked MNR to provide some information to us. Mr.  
15 Freidin advises that that information is currently  
16 being put together at his office and should be  
17 available later this morning and Mr. Armson would like  
18 to explain some of the information.

19 What I would like to do is have an  
20 opportunity to listen to Mr. Armson's explanation. At  
21 that point, after the break, I may be returning and I  
22 can ask him some questions about it or I may reserve my  
23 right to cross-examine Mr. Armson on that information  
24 at a later time. I haven't seen it yet, so I can't  
25 prejudge what is there.

1 THE CHAIRMAN: Very well.

2 MR. FREIDIN: The Interrogatory 7(a)  
3 which asked: In what percentage of the area of the  
4 undertaking being cut annually is soil depth known?

5 What I am -- I confirmed firstly with Ms.  
6 Seaborn that what she is interested in knowing is where  
7 is there information about soil depth recorded or  
8 reported in a manner in which it could be of assistance  
9 to a forester in making silvicultural decisions.

10 We can make an attempt to provide that  
11 information. We can attempt to provide information  
12 which would indicate what area within the area of the  
13 undertaking that kind of soil information is available  
14 through formal surveys and that sort of thing, but we  
15 would be unable to deal with it specifically the way it  
16 is here, the percentage of the area of the undertaking  
17 being cut annually.

18 We can say what is out there in terms of  
19 soil depth; we cannot say how much is available in  
20 relation to areas which is cut this year, next year  
21 because that changes every year.

22 So as long as that is satisfactory, then  
23 we are going to attempt to get what information.

24 THE CHAIRMAN: Do you understand that,  
25 Ms. Seaborn?

1 MS. SEABORN: That is fine. Is there any  
2 time frame, Mr. Freidin?

3 MR. FREIDIN: I don't know. I don't  
4 know. I don't think it should -- maybe a couple of  
5 weeks.

6 MS. SEABORN: That is fine, thank you.

7 KENNETH ARMSON, Resumed

8 CONTINUED CROSS-EXAMINATION BY MS. SEABORN:

9 Q. Good morning, Mr. Armson.

10 A. Good morning.

11 Q. If you can just turn to the  
12 Interrogatories, Exhibit 429. Just continuing on with  
13 Question 7. Do you have that in front of you?

14 A. Yes, I do.

15 Q. And the Ministry of the Environment's  
16 Question 7(b) was:

17 "In determining the area to be harvested,  
18 what steps and methods are taken to  
19 determine soil depth?"

20 And your response was that:

21 "When soil depth is determined it is done  
22 by physical examination of the soil  
23 conditions in the field, interpretation  
24 of aerial photographs and soil survey  
25 maps or interpretation by aircraft



1 flyovers."

2 A. Yes.

3 Q. How can soil depth be determined by  
4 interpretation of aerial photographs?

5 A. Well, in the aerial photograph if,  
6 for example, there is exposed bedrock - and here again  
7 we come back to the local knowledge of the area - but  
8 where there is exposed bedrock, then that suggests that  
9 from the knowledge of just that type of formation that  
10 the overburden will probably be shallow.

11 The distribution of trees, to some degree  
12 the nature of the vegetation may suggest that. One  
13 doesn't normally expect to find sugar maple on soils  
14 with considerable amount of exposed bedrock.

15 Q. Wouldn't the information from an  
16 aerial photograph tend to indicate the existence or  
17 non-existence of soil rather than the depth itself?

18 A. No, when you -- what is being looked  
19 at, of course, is not the soil per se, it's being  
20 interpreted and, here again, the knowledge of the  
21 vegetation, what you can see inbetween the trees, if  
22 there are spaces there are all kinds of things, if you will,  
23 from the photographs.

24 Q. And would your response be the same  
25 with respect to interpretation by aircraft flyovers?

1 Is that the same sort of information you are looking  
2 at?

3 A. Yes, but again the time of year can  
4 be an important factor in terms of, with aerial  
5 photographs, one may have photos that are taken in the  
6 season when deciduous trees don't have their leaves so  
7 you will see a little more of the ground surface,  
8 although there will be litter on it and so on.

9 Q. With respect to soil survey maps they  
10 aren't done on a site-specific basis; are they?

11 A. Are they -- if I interpret your  
12 question, not every area -- they are done on the basis  
13 of interpretation or some regular set of field sampling  
14 then is related back to aerial photographs which are  
15 then interpreted. That is the normal way in which they  
16 are done.

17 Q. And it is my understanding from a  
18 discussion we had in earlier panels that the soil  
19 surveys maps are done on a basic unit of land, whether  
20 for forestry purposes or agricultural purposes; they  
21 are not special surveys that are done for the specific  
22 action of harvesting?

23 A. No, that is correct.

24 Q. So those maps are used for a variety  
25 of uses?

1 A. That is normally the case, yes.

2 Q. Would you agree that the best way to  
3 determine the soil depth would be to actually go and  
4 look at a site?

5 A. That's correct except that the areas  
6 in which we are dealing are very extensive.

7 Q. I appreciate that. Mr. Armson,  
8 during your direct testimony a number of references  
9 were made to this term fragile or sensitive sites. Do  
10 you recall?

11 A. Yes, I do.

12 Q. And I believe that your evidence last  
13 week was that sensitive or fragile sites have no  
14 meaning unless they are defined in the context of a  
15 specific site; is that a correct evaluation?

16 A. That's correct, yes.

17 Q. And for that reason it was your  
18 testimony before the Board that fragile sites cannot be  
19 given a specific meaning?

20 A. That's correct.

21 Q. Now, you will recall that in earlier  
22 panels we looked at the classification of sites through  
23 the FRI?

24 A. That's correct.

25 Q. And one of the things we looked at in



1 Panel 2 was your 1976 report. At page 175 of the Panel  
2 2 witness statement--

3 A. I have it here, yes.

4 MR. FREIDIN: He has got it.

5 MR. ARMSON: No, I have got it.

6 MS. SEABORN: Q. You will recall that I  
7 asked you some questions about the chart on page 175.

8 A. Yes, I do.

9 Q. And you will see on that page there  
10 is a term fragile sites?

11 A. Yes, I do.

12 Q. And I believe your evidence during  
13 Panel 2 was that for the purposes of your 1976 report  
14 you accepted the definition that MNR had used for  
15 fragile sites?

16 A. Yes. This table and the use of that  
17 word I took just as it was.

18 Q. And that was taken from some of the  
19 reports leading up to the Forest Production Policy?

20 A. Yes, it was from a revised draft, as  
21 I recollect.

22 Q. And when we discussed this back in  
23 Panel 2 I think you agreed with me that you weren't  
24 sure what fragile sites meant, but that whether or not  
25 a site was fragile would be based on some physical

1 parameters?

2 A. That's right.

3 Q. I just want to look for a moment at  
4 some of the definitions that MNR has used to describe  
5 sensitive or fragile sites.

6 MS. SEABORN: And, Mr. Chairman, I am not  
7 going to take a lot of time on this, but I think it is  
8 important at this point, given Mr. Armson's testimony  
9 with respect to defining fragile or sensitive sites,  
10 that we just briefly have a look at the words that MNR  
11 has used in the past with respect to these sites.

12 Q. If you could turn to Exhibit 56 which  
13 is the Forest Resources of Ontario, 1986.

14 THE CHAIRMAN: Are we supposed to have  
15 these in front of us?

16 MS. SEABORN: Mr. Chairman, I gave a list  
17 last week to Mr. Mander of the exhibits I was going to  
18 be referring to.

19 THE CHAIRMAN: I don't think we have it.

20 MS. SEABORN: Exhibit 56. I can read in  
21 the appropriate sentences, Mr. Chairman.

22 MS. SEABORN: Q. Mr. Armson, do you have  
23 it in front of you?

24 A. Yes, I have a copy.

25 Q. Could you turn to page 17 and you

1 will see in the third paragraph down there is a  
2 definition of protection forest.

3 A. Yes, I see that.

4 Q. And the definition used for  
5 protection forest says:

6 "Protection forests are either  
7 lands with poor timber growing capability  
8 or islands less than 40 hectares in  
9 size."

10 And then it continues to say:

11 "Although these forests are capable of  
12 growing commercial timber, doing so would  
13 be detrimental to the environment,  
14 therefore, they are managed primarily to  
15 exert a beneficial influence on soils,  
16 waters and the overall landscape."

17 And that has been MNR's definition of protection forest  
18 for the purposes of the forest estate?

19 A. Well, the definition is in that first  
20 sentence. The rest is, if you like, a conclusion drawn  
21 from it.

22 Q. Okay. And production forest reserve  
23 areas are referred to in the last paragraph on the page  
24 and they are defined as:

25 "Production forest reserves are those

1 areas representing 6.1 per cent or 2.4  
2 million hectares of productive forest  
3 land which have significant silvicultural  
4 and forest management impediments. These  
5 may be extremely rocky soils, steep  
6 slopes or shallow soils."

7 Now, that definition for production forest reserve,  
8 that would appear to be one that could characterize a  
9 fragile or sensitive site; wouldn't it?

10 A. Well, it could, but it also -- the  
11 statement "which have significant silvicultural and  
12 forest management impediments", that might be an  
13 impediment to the use of machinery in relation to the  
14 equipment itself, I mean, not to the site. There are a  
15 number of ways in which that might be interpreted.

16 Q. But it could also be interpreted to  
17 mean that there is an impediment to normal operations?

18 A. That's correct, yes.

19 Q. Now, I just want to have a look at  
20 the spruce silvicultural guide which is Exhibit 382,  
21 page 54. In the second last paragraph on page 54 is a  
22 reference in terms of site preparation and it says:

23 "Shallow and very shallow sites require  
24 careful site preparation to achieve the  
25 desired results and to maintain site



1 productivity. Mineral soils or partly  
2 decomposed materials must be exposed to  
3 provide suitable seedbeds or planting  
4 sites but removal of the organic layer  
5 should be minimized to retain nutrients."

6 A. Yes, I see that.

7 Q. Now, Mr. Armson, you are not prepared  
8 to define a range of site characteristics that make a  
9 site sensitive or fragile; that's correct?

10 A. That's correct.

11 Q. And I believe it was your evidence  
12 that just because a site has shallow soil over bedrock  
13 doesn't mean that it can't be harvested; correct?

14 A. That's correct.

15 Q. And would you agree with me that if  
16 we went through the various papers which have been  
17 filed in this panel pertaining to full-tree harvesting,  
18 we would find some reference to sensitive sites or  
19 marginal sites?

20 A. Yes.

21 Q. And that that terminology is common  
22 in forestry?

23 A. It is very common and often has  
24 different meanings.

25 Q. Okay. And if you could just turn to

1 Exhibit 414A, which is Panel 10 witness statement, the  
2 first volume, and page 228. This is the report  
3 prepared by Mr. Greenwood; correct?

4 A. Yes.

5 Q. Now, Mr. Greenwood is discussing the  
6 effects of full-tree harvest and if you look at the  
7 very top of page 227 -- I'm sorry, 228, in the last  
8 sentence I believe what Mr. Greenwood is saying is that  
9 the forester should ensure the integrity of nutrient  
10 reserves on sensitive sites; is that correct?

11 A. Yes, that is what he says.

12 Q. Now, I take it if a definition can't  
13 be given of a sensitive or a fragile site, then a  
14 prescription could not be made which says that you  
15 never harvest on a site with shallow soils or rocky  
16 soils?

17 A. Yes, a blanket prescription seems to  
18 me a contradiction in terms. It is no longer a  
19 prescription, it is a regulation.

20 Q. If the conclusion we can draw from  
21 your evidence is that there are no general rules, would  
22 you agree that in every circumstance there are going to  
23 be a range of choices that are going to have to be made  
24 by the unit forester?

25 A. Yes, there are a number of

1       prescriptions that can be written.

2                   Q.   But what he is going to have to do is  
3       look at a number of factors and he is going to have to  
4       decide, for example, when is a shallow soil too  
5       shallow?

6                   A.   That's correct.

7                   Q.   And unit foresters are going to  
8       differ, aren't they, when they are applying their  
9       discretion as to how to treat a particular site?

10                  A.   They may well, yes.

11                  Q.   And I think you have implied in your  
12       testimony that it is difficult to set out general rules  
13       for the unit foresters involved?

14                  A.   Well, we do have guidelines which you  
15       have referred to.

16                  Q.   Okay.  Other than the silvicultural  
17       guides that we have talked about?

18                  A.   And the body of information that is  
19       generally available professionally.

20                  Q.   Okay.  Doesn't this approach drive  
21       you to the conclusion that what you really have to do  
22       is go out and take a look at sites prior to harvest and  
23       renewal because you can't define a treatment without  
24       considering the specifics of the site?

25                  A.   Whether an actual physical

1 examination is always necessary is not, in my opinion,  
2 the case. If that is your question I -- in many  
3 instances, yes, a physical examination may well be  
4 necessary.

5 Q. And would you agree with me that the  
6 best way to evaluate environmental impacts in the long  
7 term would be to have information that is as  
8 site-specific as possible?

9 A. I think that the greater amount of  
10 information the better, except that sometimes we have  
11 so much we can't see our way through it.

12 Q. And isn't that really the situation  
13 we were in with the white pine example that you gave  
14 us. You described how, for whatever reason, it was a  
15 sensitive or a fragile site and the forester went in  
16 and had a look at it - and you are going to describe  
17 what happened later on this morning - but for whatever  
18 reason, they changed their mind about how to treat that  
19 site?

20 A. Yes, that is the essence of that  
21 example.

22 Q. And the rationale for making that  
23 decision is something that the unit forester would have  
24 to write down somewhere?

25 A. In the present situation the answer



1 is yes. In the example I gave, which is over three  
2 decades old, I don't recall and I don't believe -- I  
3 couldn't certainly find any written prescription as  
4 such.

5 Q. When you say in the present  
6 situation, you mean under the --

7 A. Timber management planning process.

8 Q. Okay. Mr. Armson, would you agree  
9 that if there is a greater chance with specific sites  
10 that there may be environmental damage, then that would  
11 make it all the more important for that particular site  
12 to go and have a look at it?

13 A. Yes, I believe that would be the  
14 situation.

15 Q. I just want to deal now with the  
16 topic of full-tree harvesting. Now, large-scale  
17 full-tree harvesting within Ontario is a recent  
18 practice; is that not correct?

19 A. Yes, relatively recent.

20 Q. And I just want to have a look at the  
21 Environmental Assessment Document for a moment. And if  
22 you could turn to page 38 of the EA. If you look under  
23 Item 3, the full-tree logging system, do you have that?

24 A. Yes, I have got that.

25 Q. The last sentence of that paragraph

1       says:

2                       "Approximately 15 per cent of Ontario's  
3                       annual harvest is undertaken using this  
4                       logging method."

5       Correct?

6                       A.   That is what it says.

7                       Q.   Okay.   And as I understand the Panel  
8       10 evidence, the figure given for full-tree harvesting  
9       was 65 per cent; is that correct?

10                      A.   Yes, I do recall that figure.

11                      Q.   Could you explain to me what has  
12       accounted for the large increase in the use of this  
13       method since preparation of the Environmental  
14       Assessment Document?

15                      A.   Well, I am not an expert in logging  
16       but I would think that the availability of equipment,  
17       the economics of using it and so on would all be  
18       factors.

19                      Q.   Would you agree that the increase is  
20       largely as a result of economics?

21                      A.   Well, I couldn't say yes or no to  
22       that.   As I indicated, that is certainly one of the  
23       factors that must be involved.

24                      MR. FREIDIN:   Mr. Oldford will be  
25       addressing the factors which, in the Ministry's view,

1 has led to the change.

2 MS. SEABORN: Thank you.

3 Q. And, as I understand your position on  
4 this issue, there should be no circumstances under  
5 which the use of full-tree logging should be  
6 restricted; correct?

7 A. No, I didn't say that. I believe  
8 earlier in this panel I said that I personally believed  
9 there were certain instances where full-tree harvesting  
10 would not be used or should not be used in my judgment.

11 Q. Okay. And was that with respect to  
12 your comment about in the winter versus the summer?

13 A. I said that there was often -- or  
14 there could be a seasonal -- in my view, a seasonal  
15 constraint, if you will, put on it but there might --  
16 there are conceivably situations where it would not be  
17 the appropriate -- in my view, the appropriate  
18 harvesting system.

19 Q. If you could just turn again back to  
20 Mr. Greenwood's paper at page 228. Do you have the  
21 second paragraph?

22 A. Yes.

23 Q. And Mr. Greenwood says that:

24 "Since the potential for productivity  
25 loss in Ontario is not considered

1                   significant given current harvest  
2                   practices and rotations, measures to  
3                   prevent or minimize these potential  
4                   effects do not normally form part of  
5                   operational decision-making at this  
6                   time."

7           Correct?

8                   A.   Yes.

9                   Q.   And is that, in a nutshell, MNR's  
10           position with respect to the use of full-tree  
11           harvesting?

12                   A.   I think that is a good general  
13           statement, yes.

14                   Q.   Okay.   And in your Panel 9 witness  
15           statement at page 52--

16                   A.   Yes, I have that.

17                   Q.   --you had said in your evidence when  
18           referring to full-tree harvesting:

19                   "There is little if any evidence that  
20           such removal significantly reduces  
21           nutrient levels in the forest system so  
22           as to impact on future forest  
23           development."

24                   A.   Yes.

25                   Q.   And that is your position with



1       respect to the use of this method?

2                   A.   That's correct.

3                   Q.   Now, if we could just go back to the  
4       interrogatories filed by the Minister of the  
5       Environment.  And I want to have a look at an  
6       interrogatory filed by MOE in regards to Panel 10 and  
7       it is Question No. 9.

8                               MS. SEABORN:  And that  
9       should be in the bundle, Exhibit 428, Mr. Chairman.

10                  Q.   Question 9, Panel 10.  Do you have  
11       that in front of you?

12                  A.   Yes, I have that.

13                  Q.   And in our question we had asked for  
14       MNR to list the studies which are relevant to the  
15       conclusion with respect to full-tree harvesting and, as  
16       well, to provide us with information as to the studies  
17       that MNR relies on, and that information is summarized  
18       in the chart that you provided to us?

19                  A.   Yes.

20                  Q.   And your response indicates that:

21                        "While all six of the studies are  
22                        relevant to the conclusion, there are  
23                        only three that are MNR is relying on."

24       Correct?

25                  A.   That's correct.

1                   Q. And in all six studies, whether or  
2 not there was satisfactory regeneration, that wasn't  
3 measured; was it?

4                   A. No, that's correct.

5                   Q. So we don't know about satisfactory  
6 regeneration in terms of full-tree harvesting?

7                   A. That's right, not from studies.

8                   Q. And in your direct testimony Mr.  
9 Freidin asked you some questions about these studies.  
10 Do you recall that?

11                  A. Yes.

12                  Q. And I will just read it right from  
13 the transcript. It is found in Volume 72 at page  
14 12214, and the question beginning at line 6 was:

15                    "In terms of these scientific papers, do  
16 the authors indicate whether, in their  
17 view, there should be any prohibition, in  
18 whole or in part, of the full-tree  
19 logging method?"

20 And your response was that:

21                    "One author, as I recollect one paper - I  
22 believe it was Dr. Timmer - made that  
23 recommendation."

24 And then Mr. Freidin went on to say:

25                    "We will deal with that one in a moment."

1 And then he asked you another question which was:

2 "In a general sense, do the authors of  
3 those papers that you have referred to  
4 come to any conclusion and provide any  
5 view -- their view, as to the application  
6 of the results of their particular  
7 studies to other geographical areas  
8 within -- well, other sites within the  
9 same type of forest region."

10 And your response was that:

11 "Well, I think that the nature -- the  
12 authors very generally make it clear that  
13 the results pertain only to the situation  
14 that they investigated. I think that by  
15 the very nature of their scientific  
16 investigation, they recognize the hazards  
17 of attempting or taking results from one  
18 specific location and applying them  
19 exactly to another one."

20 A. Yes, I recall that.

21 Q. Now, I just want to look at a couple  
22 of the studies that you rely on and at page 81 of the  
23 witness statement, Panel 9 -- Panel 9 witness statement  
24 is Exhibit 414. And at page 81 on the right-hand  
25 side--

1 A. Yes, I see that.

2 Q. --there is the last paragraph where  
3 the author is summarizing his conclusions. This is one  
4 of the Foster and Morrison reports?

5 A. Yes.

6 Q. And starting with the second sentence  
7 at page 81, the authors say:

8 "There appear to be sufficient nutrient  
9 reserves and replenishment at this site  
10 after full-tree logging despite the  
11 restricted rooting depth and volumes to  
12 sustain the next generation of spruce  
13 through the early growth period."

14 Correct?

15 A. Yes, that's correct.

16 Q. Now, if we look at the conclusions of  
17 this Foster and Morrison study, aren't the authors  
18 saying that for the particular site they investigated  
19 there appear to be sufficient nutrient reserves?

20 A. That is correct.

21 Q. And I believe that the site that they  
22 looked at was a Site Class X; was it not?

23 A. I would have to look at the details  
24 of the measurements there. I don't think they  
25 referred -- in other words, in their article they



1       didn't refer to it as an X, they gave dimensions of the  
2       stand.

3                   Q.   Okay.  Will you accept my comment  
4       that it was Site Class X subject to you checking?

5                   A.   I believe it was a 1 or better and  
6       that could be an X, yes.

7                   Q.   Okay.  And in the other Foster and  
8       Morrison study that MNR relies on, the authors were  
9       looking at a jack pine site; were they not?

10                  A.   That's correct.

11                  Q.   And I believe that was a good site;  
12       wasn't it, it was a Site Class 1?

13                  A.   I believe it was a -- yes, certainly.

14                  Q.   Okay.  And the third study that you  
15       relied on is the Weetman and Webber study, Exhibit 422.  
16       And the Weetman and Webber study looked at a site that  
17       was -- they defined as average fertility?

18                  A.   Yes, I have the paper.  I don't  
19       recall those exact words, but I think that was the  
20       general...

21                  Q.   I am looking actually at the first  
22       sentence in the summary on the first page of the paper.

23                  A.   Yes, it is in the second line of that  
24       summary.

25                  Q.   Okay.  Now, this is one of the three

1 studies that MNR relies on according to the  
2 interrogatory answer; correct?

3 A. Yes.

4 Q. If you could turn to page 367 of the  
5 Weetman and Webber report.

6 A. Yes, I have that.

7 Q. And one of the conclusions in this  
8 report is found under Item 4 on the left-hand side of  
9 the paper.

10 A. Yes.

11 Q. And it says:

12 "On sites of marginal fertility, such as  
13 dry, rocky and sandy sites and muskegs,  
14 it should be recognized that full-tree  
15 logging may deplete nutrient reserves to  
16 such an extent that application of  
17 appropriate fertilizers may be required  
18 in order to achieve satisfactory growth  
19 rates in the second rotation."

20 A. Yes, I see that, I read that.

21 Q. And I think there was some discussion  
22 during your direct testimony in response to a question  
23 from the Board about whether or not we use fertilizers,  
24 or was that in a different context?

25 A. No, I do recollect a statement or a

1 question concerning that.

2 Q. We don't do that in --

3 A. Not operationally, no.

4 Q. And just sticking with that page,

5 367, the conclusion No. 10 that's reached by the

6 authors, they say:

7 "More detailed studies of the nutrient

8 cycles of other individual forest

9 eco-systems need to be made before firm

10 conclusions can be drawn as to the

11 long-term effects of nutrient losses in

12 logging on soil fertility."

13 Do you see that conclusion?

14 A. Yes, I see that.

15 Q. The other item that was dealt with

16 last week was the Timmer recommendation. Do you recall

17 that?

18 A. Yes, I do recall that.

19 Q. And I believe one of the rationales

20 for rejecting the Timmer recommendation is that that

21 recommendation is applicable to the site and forestry

22 conditions in the region that was studied; is that

23 correct?

24 A. No, I don't -- would you repeat the

25 question because I don't think...

1                   Q. You were explaining last week in your  
2 direct testimony as to why you could not accept the  
3 recommendation provided by Dr. Timmer.

4                   A. Yes.

5                   Q. And I think one of your reasons was  
6 that the study could only be said to be applicable to  
7 the site and forestry -- and forest conditions in the  
8 region that was studied, so that you couldn't  
9 extrapolate his recommendation to other areas.

10                  A. I don't recollect giving that as the  
11 reason. I believe I indicated that the data from his  
12 study raised some questions as to the comparison that  
13 he made between the full-tree harvesting on the "deep  
14 soil" as compared to the "shallow soil". There were  
15 two different times.

16                  I believe I indicated that the deep soil  
17 was harvested in the wintertime - this was in the  
18 paper - and that the shallow soil was harvested in  
19 mid-summer, and that this would consequently have a  
20 considerable bearing on the amount of debris or slash  
21 that would be left.

22                  In the table - I don't have it right in  
23 front of me - the table in that article indicates this  
24 in terms of the magnitude and, therefore, in coming to  
25 a balance sheet there was some questions as to the



1 difference, if you like, in the timing of the  
2 operation.

3 Q. Okay. If you could just have a look  
4 at -- I recall you making that explanation, Mr. Armson,  
5 but just have a look at Volume 72 of the transcript at  
6 page 12239, and this was in response to questions by  
7 Mr. Freidin on this topic.

8 And at page 12239 Mr. Freidin, beginning  
9 at line 19, says:

10 "And do we find that limitation or  
11 qualification of the report in the first  
12 full paragraph above the  
13 recommendations?

14 A. We do find only a statement  
15 that the study was conducted in the area.  
16 The recommendations are generalized and  
17 applicable to the site and forestry  
18 conditions in the region."

19 A. Yes, their recommendations were  
20 general, if that's -- from a specific study.

21 Q. And I just want to be clear about  
22 this. What you were saying about the Timmer Report is  
23 that you could not take the conclusions reached by that  
24 author and apply it to other sites?

25 A. I wouldn't generalize. From their

1 conclusions, their data and so on I wouldn't  
2 generalize.

3 Q. Okay. Now, the Timmer Study was one  
4 that was funded by MNR; wasn't it?

5 A. Yes, that's correct.

6 Q. And I don't want to go over old  
7 ground because this was dealt with last week, but I  
8 believe that Ms. Swenarchuk asked you some questions to  
9 the effect that while the Timmer Study may have been  
10 the only one that had recommendations against limiting  
11 full-tree harvesting, the other studies had cautions in  
12 them with respect to full-tree harvesting on what we  
13 might call lower site classes?

14 A. I think she used the word concerns  
15 and I agreed that some of the authors expressed various  
16 concerns.

17 Q. And we had a look at the  
18 interrogatory and we have established that whether or  
19 not there has been satisfactory regeneration was not  
20 considered by the authors?

21 A. That's correct.

22 Q. Now, I just want to look at one other  
23 interrogatory and that was Question 9 filed by the  
24 Ministry of the Environment with respect to Panel 9,  
25 and that's again in the Exhibit 429.

1                   A. Yes, I have that interrogatory  
2                   number.

3                   Q. And one of the questions we asked  
4                   about the two studies that were referenced in the Panel  
5                   9 witness statement was:

6                   "Does MNR consider these results to be  
7                   applicable to lower site classes?"

8                   Do you see that question?

9                   A. Yes, I see that.

10                  Q. And the answer was basically to the  
11                  effect that you can't project these results to lower  
12                  site classes?

13                  A. That's right.

14                  Q. Okay. Would you agree with me, Mr.  
15                  Armson, that where we are really at with this full-tree  
16                  harvesting issue is that we just don't know?

17                  A. Oh, I think we have some indications  
18                  that where the pools of nutrients are in just, if you  
19                  like, sensed in a rather broad way, not by necessarily  
20                  chemical analysis, that we have no indication that in  
21                  the full-tree harvesting - and these are purely  
22                  professional judgments made on the basis of very  
23                  limited information - that they are not having a  
24                  deleterious effect on the growth of the new stands and,  
25                  therefore, presumably not impeding the nutrient uptake

1 to any considerable degree.

2 And we have the statements from a number  
3 of the scientists who believe that the key areas for  
4 future study are on the measurement of those rates of  
5 movement of available nutrients.

6 Q. Let's go back to page 81 of the Panel  
7 9 witness statement which is the Foster and Morrison  
8 Study that MNR relies on.

9 Page 81, the left-hand side of the page,  
10 the last paragraph, and just starting with the sentence  
11 in the middle of the last paragraph where it says  
12 "Weetman..."

13 A. Mm-hmm.

14 Q. "Weetman and Webber (1972),  
15 Gordon (1983), and Timmer et al. (1983)  
16 have cautioned that some infertile or  
17 shallow sites may contain insufficient P,  
18 K or Ca to sustain a fully productive  
19 second rotation forest after full-tree  
20 logging. These studies document the  
21 large site-to-site variability in  
22 nutrient reserves as was observed in  
23 stand nutrient contents."

24 And then a little bit further down he says:

25 This, together with the degree of



1                   uncertainty is..." he must mean in,  
2                   "...quantifying site nutrient reserves,  
3                   demonstrates the difficulties of trying  
4                   to generalize about potential impacts of  
5                   harvesting on the nutrition of future  
6                   rotations of spruce forest."

7                   A. Yes, I see that.

8                   Q. Now, if we looked at the cautions  
9                   that Ms. Swenarchuk took you to and we look at these  
10                  statements that are in the studies that MNR relies on,  
11                  isn't the best you can say about full-tree harvesting  
12                  is that we haven't had a long enough time to study it  
13                  to know what the potential impacts are?

14                  A. No, I believe that we have from the  
15                  existing knowledge and considering these cautions, but  
16                  considering also the factors that control tree growth,  
17                  that we do have some general sense of what the impacts  
18                  can and will be. That would be my view.

19                  Q. Well, in terms of what we have out  
20                  there to look at, full-tree harvesting is a relatively  
21                  new phenomenon; correct?

22                  A. Relatively new in terms of the  
23                  mechanization. We know the impacts of removing  
24                  materials from the nutrient cycle and we have some  
25                  historical information about that.

1                   Q. But in terms of long-term effects,  
2 full-tree harvesting within the area of the undertaking  
3 has only, since the EA has been prepared, jumped from  
4 the 15 per cent to the 65 per cent?

5                   A. That is correct.

6                   Q. So aren't we in a situation where at  
7 the very least what we need to do is be cautious when  
8 we are embarking on full-tree harvesting?

9                   A. I believe that on certain specific  
10 sites we would be cautious.

11                  Q. And the Timmer Report which provides  
12 the most significant caution or recommendation was the  
13 only study that is provided where they looked at a,  
14 what I would call, a marginal site rather than a good  
15 site?

16                  A. I wouldn't call it marginal.

17                  Q. The Timmer site?

18                  A. I don't think the shallow soil was  
19 marginal.

20                  Q. So you don't agree that the shallow  
21 soil on that site was a marginal site?

22                  A. No, it was a shallow soil, but  
23 marginal with respect to productivity? I don't think  
24 it was marginal in terms of the -- it wasn't a high  
25 site; it wasn't a low site.

1 THE CHAIRMAN: Ms. Seaborn, are you  
2 really going to get any further with this line, because  
3 I don't think you are getting from Mr. Armson the exact  
4 answer you want and I think you could --

5 MS. SEABORN: I am getting close.

6 THE CHAIRMAN: Well, I think he stated  
7 his opinion on several occasions and it may not accord  
8 with yours, but I don't think we are going further.

9 MS. SEABORN: I accept. I just want to  
10 be clear exactly what MNR's position is on this and I  
11 think I have exhausted it in any event.

12 Q. Mr. Armson, I just want to deal now  
13 with the issue of water yield.

14 A. Yes.

15 Q. And in your testimony and in material  
16 filed before the Board you described the hydraulic  
17 (sic) cycle to us?

18 A. Yes.

19 Q. And you described how the cycle works  
20 and explained how the water enters the forest as  
21 precipitation and leaves it as evapotranspiration?

22 A. And ground water and--

23 Q. Runoff.

24 A. --runoff, yes.

25 Q. And a significant loss in the soil

1 forest system is evapotranspiration?

2 A. That's correct.

3 Q. I understand the evapotranspiration  
4 component of the cycle is an important factor in  
5 influencing water yield. Would you agree?

6 A. Yes.

7 Q. And transpiration occurs from  
8 vegetation?

9 A. Yes.

10 Q. And I think your evidence on this  
11 point was that for that reason the amount of vegetation  
12 and the type of vegetation will affect the amounts of  
13 water in the cycle?

14 A. Yes.

15 Q. There were some questions that were  
16 posed to you last week with regard to tropical rain  
17 forests. Do you recall that discussion?

18 A. Yes.

19 Q. And I think you would agree with me  
20 that the water yields in the area of the undertaking  
21 would be very different from those found in a tropical  
22 rain forest because we are dealing with different  
23 vegetation?

24 A. Yes, but I can't speak to the  
25 differences.



1 Q. No, don't worry, I am not going to go  
2 into them. I just wanted to -- there are differences?

3 A. Yes, there are differences.

4 Q. If you could just turn to page 55 of  
5 the Panel 9 witness statement. And the last paragraph  
6 on page 55--

7 A. Yes.

8 Q. --says that:

9 "For the hydrologic and nutrient cycles,  
10 changes in movement or flux resulting  
11 in losses to the specific forest system  
12 are generally considered minimal in terms  
13 of environmental impact and are of one to  
14 several years' duration."

15 And then you give an example which I believe is from  
16 the Nicholson, Foster and Morrison Study?

17 A. Yes, that's correct.

18 Q. "For example, in the hydrologic study  
19 in northwestern Ontario, results showed  
20 the increase in water yield following  
21 harvest dropped off dramatically after  
22 the first year, although still remaining  
23 above the water yield from the  
24 undisturbed forest at year four."

25 And year four was the end of the study.

1                   Now, if you could just turn to page 89 of  
2                   the witness statement, Panel 9, and under the heading  
3                   Unit Area Flow?

4                   A. Yes.

5                   Q. The third paragraph in the second  
6                   sentence, it says:

7                   "Increases of 44 to over 300% on a  
8                   monthly basis occurred during the first  
9                   year with an overall six-month average  
10                  increase to 98%. By the fourth year  
11                  following clearcutting, these increases  
12                  moderated somewhat but still range from  
13                  40 to over 200% with a six-month average  
14                  of 78%."

15                 Now, wouldn't you agree with me that what the authors  
16                 found in this study was that the dramatic increases in  
17                 water yield had merely moderated somewhat by the fourth  
18                 year following clearcut?

19                 A. Yes, they had moderated.

20                 Q. And what I was trying to sort out in  
21                 my mind was how you came to the conclusion that the  
22                 increase in water yield following harvest had dropped  
23                 dramatically after the fourth year at page 55.

24                 A. Well, there was a range in -- first  
25                 of all, these are related to peak flows and there was a

1 range, if you like, in the increases but certainly, if  
2 I recollect -- and I go to the flows during the period.  
3 Unfortunately they are given on a table for just the  
4 one year on page 91, and I believe Table 1.

5 Table 1 gives the water production but  
6 just for the one year, based on the cut one year and  
7 one that had been cut four years, correct?

8 And what you are asking is: Is there a  
9 difference or is the difference significant; is that  
10 your question?

11 Q. Well, I was just trying to  
12 understand. In the evidence you had said that the  
13 water yield following harvest dropped dramatically and  
14 when I read the conclusions in the report at page 89  
15 what they seemed to indicate was that there was a --  
16 was that the increases had moderated somewhat?

17 A. Well, they had moderated --

18 Q. Rather than that there was a dramatic  
19 drop after the first year?

20 A. Well, there is -- for example,  
21 between -- it depends on the month, and you can find  
22 anything from essentially no change as in May to almost  
23 a halving - not quite a halving - in September and  
24 certainly a 30 per cent reduction in September. I  
25 think those are the figures I was looking at.

1 Q. If you could just turn to the Panel  
2 10 witness statement at Volume I, which is Exhibit  
3 416A.

4 MR. FREIDIN: What page?

5 MS. SEABORN: Page 414.

6 Q. Do you have that, Mr. Armson?

7 A. Yes, I do have that.

8 Q. Now, in this report filed in Panel  
9 10, the authors cited a study that was done over a  
10 27-year period; correct?

11 A. Yes, that's correct.

12 Q. And if you look on page 414 on the  
13 right-hand side of the page in the last paragraph they  
14 say that:

15 "Yield increases persist for several  
16 years after cutting, well after  
17 establishment of the new stand."

18 And then it goes on to say:

19 "Inasmuch as water is a major economic  
20 limitation in these regions, it appears  
21 that amount and pattern of harvest  
22 cutting will be strongly shaped by their  
23 capacity to influence water yield."

24 Now, would you agree with me that this study cited in  
25 the Panel 10 evidence indicates that increased water



1 yields can persist for a significant number of years?

2 A. Yes, but I would note this was done  
3 in Coweeta in North Carolina which is a totally  
4 different topographic condition and vegetation, the  
5 forest is different.

6 Q. And the study that was cited in your  
7 evidence only, only went on for four years?

8 A. That's correct.

9 Q. So we just don't know, if we had  
10 taken that study for a longer period, what would have  
11 been the long-term effects on water yield?

12 A. That's correct, yes.

13 Q. And would you agree with me that the  
14 long-term effects on water yield of clearcutting is an  
15 area that we don't have conclusive evidence about?

16 A. No, there is not conclusive evidence  
17 although we know that we do increase water yields and  
18 it will persist for some time.

19 Q. Now, for Panel 10, Volume II, could  
20 you turn to page 858.

21 A. I am sorry, what page?

22 Q. Page 858, Volume II. The last full  
23 paragraph at page 858 says:

24 "Timber harvesting increases soil acidity  
25 by removing a portion of the base cations

1 from a watershed in harvested wood."

2 Now, the base that is referred to there, that would be  
3 calcium and magnesium?

4 A. Those would be calcium, magnesium and  
5 potassium I would think would be the three bases,  
6 particularly the first two.

7 Q. And acidification is essentially any  
8 acid addition or a base removal; correct?

9 A. Yes. At least the result of removal  
10 of bases may or may not result in acidity in the soil.  
11 This is presumably what we are speaking of.

12 Q. Yes. And through removal of biomass,  
13 a site could be acidified without any change in the pH;  
14 would you agree with that?

15 A. No, because the measure of  
16 acidification would be the pH value.

17 Q. Well, isn't also another measure of  
18 acidification the extent to which you remove base  
19 independent of a change pH?

20 A. No, that is a removal of bases, but  
21 it doesn't necessarily follow that acidification -- I'm  
22 not splitting -- acidification is definitely measured  
23 by the change in value of the hydrogen ion  
24 concentration which is influenced or can be influenced  
25 by bases.

1 Q. If you look at page 859 the paragraph  
2 says:

3 "Although the effect has not been  
4 documented, acidification of soils in  
5 the long term could potentially result in  
6 acidification of waterbodies. Increased  
7 inputs of hydrogen ions could increase  
8 the acidity of poorly buffered systems."

9 Would you agree with me that if you remove the  
10 buffering capacity you could acidify a site without  
11 noticeably changing the pH?

12 A. No, you can't. If you acidify it,  
13 the pH value will change.

14 Q. So in all circumstances you would say  
15 that the pH value would change?

16 A. Yes, that is how we measure it.

17 Q. And I think, Mr. Armson, in your  
18 direct testimony you said that there is no clear  
19 evidence as to whether removal of nutrients in the  
20 harvest material could result in a more acid soil  
21 condition following harvest?

22 A. That's correct.

23 Q. If you could turn to page 80 of the  
24 Panel 9 witness statement. Now, on page 80 of the  
25 Panel 9 evidence on the left-hand side of the page, you

1 see the last paragraph, and the last line says:

2 "The annual acidifying effect of the  
3 vegetation removal by full-tree  
4 harvesting averaged over the rotation  
5 period was eight times greater than the  
6 estimated annual acid deposition from  
7 precipitation."

8 Do you see that?

9 A. I see that.

10 Q. Yes. Now, in light of the magnitude  
11 that is described in the Foster and Morrison report,  
12 would you agree with me that the effects could be  
13 significant?

14 A. They could be.

15 Q. And would you agree with me that in  
16 terms of acidification of water bodies, we are again in  
17 a position where our level of knowledge is at a  
18 preliminary stage?

19 A. It is at pre -- yes, but we have some  
20 considerable body, a little better than preliminary.

21 Q. Mr. Armson, could you turn to page 14  
22 of your witness statement.

23 A. Yes.

24 Q. At the bottom of the page you state  
25 that:



1                   "The definition of "fragile sites",  
2                   therefore, only has meaning when placed  
3                   in the context of time and values."

4       Now, I just want to ask you a couple of questions about  
5       the context of this statement. Would you agree with me  
6       that the values associated with that statement could be  
7       defined as environmental effects or the acceptability  
8       of environmental effects?

9                   A. Yes, they can be -- they could be the  
10       values.

11                  Q. And could the values also be defined  
12       as being tradeoffs and the use of integrated resource  
13       management?

14                  A. Yes.

15                  Q. And the time that is associated with  
16       that statement, would that time be essentially the time  
17       that it would take to mitigate effects and to  
18       revegetate a site?

19                  A. Essentially that is it, yes.

20                  Q. But would you agree with me that the  
21       time and values, using the above examples, are not  
22       strictly defined in the environmental assessment?

23                  A. Well, they are not specifically  
24       defined, if that is what you mean. The values are  
25       brought to a given situation by the society that is

1 utilizing the resource.

2 Q. And would you accept that it would be  
3 a legitimate function of this Board to define time and  
4 values for the purpose of the undertaking?

5 A. I believe the Board can define  
6 whatever they wish to define. If they wish to put some  
7 values or specific values, yes, that is their  
8 prerogative, I presume, Mr. Chairman.

9 MS. SEABORN: Thank you. Mr. Chairman,  
10 subject to discussion of the white pine, those are all  
11 my questions.

12 THE CHAIRMAN: Thank you.

13 MS. SEABORN: Thank you.

14 THE CHAIRMAN:

15 Ladies and gentlemen, we are now up to  
16 the point in the cross-examinations to hear from  
17 counsel for the Federation, if he is present. Is their  
18 counsel present?

19 DR. QUINNEY: If I may, Mr. Chairman and  
20 members, my name is Dr. Terry Quinney. I do indeed  
21 work for the Ontario Federation of Anglers & Hunters.  
22 Our counsel will be here.

23 The estimation we had from Mr. Mander was  
24 that Ms. Seaborn would end around eleven a.m., so  
25 counsel will be in for eleven a.m., if that is

1 acceptable to you.

2 THE CHAIRMAN: Okay. Well, I think at  
3 this point then we will break until eleven.

4 DR. QUINNEY: Thank you.

5 THE CHAIRMAN: And continue with your  
6 examination. Do you have any idea how long counsel  
7 will be?

8 DR. QUINNEY: Half day maximum.

9 THE CHAIRMAN: Half day. Very well. We  
10 may get to some re-examination.

11 MR. FREIDIN: No.

12 THE CHAIRMAN: We won't. What if we  
13 finish about three or four o'clock, you won't be ready  
14 to go?

15 MR. FREIDIN: No, not completely. I  
16 would rather not start.

17 THE CHAIRMAN: Well, let's see where we  
18 end up, Mr. Freidin.

19 MS. SEABORN: Mr. Chairman, perhaps Mr.  
20 Armson could put the information on the record after  
21 the break with respect to the white pine. It would  
22 give me a chance to consider it, rather than waiting  
23 until re-examination or after the Federation poses  
24 their questions.

25 THE CHAIRMAN: All right, we will do

1       that.

2                       MR. ARMSON: I believe the information  
3       has just come in the room.

4                       THE CHAIRMAN: Okay. Well, let's do  
5       that.

6                       We will break now until eleven o'clock  
7       and then we will go ahead with you, Mr. Armson, and  
8       then we will go ahead with the counsel for the  
9       Federation.

10                      Thank you.

11       ---Recess taken at 10:25 a.m.

12       ---Upon resuming at 11:15 a.m.

13                      THE CHAIRMAN: Thank you. Be seated,  
14       please.

15                      Just before we start with you, Mr.  
16       Freidin, the Board wants to make some announcements  
17       with respect to the hearing schedule.

18                      Next week the Board was scheduled to sit  
19       Monday through Friday and instead we are going to sit  
20       late on the Thursday until probably five o'clock and  
21       allow people to leave Thunder Bay in the evening that  
22       day and we will not be sitting on Friday.

23                      So effectively we will probably try to  
24       accomodate the same number of hearing hours that week  
25       by sitting late on Thursday.



1 MR. FREIDIN: Are we starting at one  
2 o'clock on the Monday, Mr. Chairman?

3 THE CHAIRMAN: We are starting at one  
4 o'clock on the Monday, yes. Okay.

5 Friday the 31st of March, I think the  
6 Board had intended to sit. It turns out that that is  
7 the day that the Environmental Assessment Board is  
8 holding a joint seminar with members of the Ontario  
9 Municipal Board and we had to accomodate their schedule  
10 to some extent so we will not be sitting that day.

11 Now, in April. For the month of April we  
12 will not be sitting the week of the 17th through the  
13 21st. There are some religious holidays in the middle  
14 of that week and it doesn't make sense to have to work  
15 around them coming to Thunder Bay. So that week will  
16 be out of the schedule.

17 In May, we will not be sitting on the  
18 29th, 30th or 31st, I believe is a Monday, Tuesday and  
19 Wednesday; however, we are proposing that week to sit  
20 two days in Toronto so that we don't lose the entire  
21 week and we feel that it is possible to do that if we  
22 find out where we are in the evidence and ensure that  
23 the necessary exhibits for that portion of the evidence  
24 for two days are available, and we will likely sit at  
25 the Board's hearing room in Toronto.

1                   And looking ahead to June, at the moment  
2                   we will not be sitting on the 12th and 13th of June,  
3                   but will sit the 14th, 15th and 16th of that week. And  
4                   we are suggesting that we come in Tuesday night on the  
5                   13th so that we can have an early start on Wednesday  
6                   the 14th.

7                   We will be breaking, of course, at the  
8                   end of that month for the month of July and the first  
9                   week of August for the summer break and there may be  
10                  some slight amendments to that schedule, but we wanted  
11                  to try and advise counsel and the parties as early as  
12                  possible as to what the Board's intention is in respect  
13                  to the schedule.

14                  Now that, of course, is always subject to  
15                  where we are in the evidence and which panel finishes  
16                  where and that kind of thing.

17                  MR. FREIDIN: Because we haven't dealt  
18                  with what was going to happen in March, the days that  
19                  we will be sitting in April, the week of April the 3rd,  
20                  April the 10th, April the 24th does the Board have any  
21                  sense as to which days we would be sitting on those --  
22                  these are the other weeks that we are going to be  
23                  sitting?

24                  THE CHAIRMAN: Well, again, we find it  
25                  difficult to sit five-day weeks because the Board quite

1       frankly needs the extra day to keep other things  
2       running, particularly this member who has a Board to  
3       chair, et cetera. We don't mind sitting the odd  
4       five-day week to try and make up some time when we have  
5       been off for one reason or another, but we would like  
6       to, I think, keep it to four-day weeks and it will  
7       probably be Monday through Thursday.

8                 Now again, we are willing to adjust the  
9       schedule from time to time depending on where we are in  
10      the evidence and whether or not we are going to finish  
11      off a particular panel or something like that, but I  
12      think we have to play it by ear as we go along.

13                MR. FREIDIN: That just helps in terms of  
14      us assessing whether we would want to ask for any  
15      adjustments in that.

16                Thank you.

17                THE CHAIRMAN: Okay.

18                Now, one more thing while we are on the  
19      schedule. We should set a time for the scoping of  
20      Panel 11 which I believe we indicated we are going to  
21      do this week.

22                Doug, have you got all the statements?

23      ---Discussion off the record.

24                THE CHAIRMAN: Mr. Mander advises he is  
25      not sure that he has got all of the statements of issue

1 in, but we are nevertheless going to press along with  
2 the scoping of Panel 11. The ones that aren't in won't  
3 have any input. We have extended the deadline on the  
4 Panel 11 statements of issue twice now and we feel the  
5 parties have had an adequate opportunity to put them  
6 in.

7 Mr. Freidin indicated that he would  
8 prefer if we did the scoping of Panel 11 prior to  
9 starting Panel 10, but that would mean tomorrow. I  
10 don't know that Ms. Swenarchuk is here today, I don't  
11 see her.

12 MR. FREIDIN: Right. I think I would  
13 prefer that we perhaps wait until we set an exact time  
14 for that until the cross-examination is over, because  
15 the amount of work that I have to do to get ready for  
16 re-direct may affect my ability to adequately  
17 participate in the scoping session sort of the very  
18 next day. So I would appreciate if you would just hold  
19 off on that.

20 I still would like to hold it earlier as  
21 opposed to later, but obviously I don't want to do it  
22 when I haven't got the time to address the issues.

23 MR. COSMAN: Can we accomodate that, Mr.  
24 Chairman, and at the same time accomodate other parties  
25 who were going to bringing people in for that scoping



1 session who aren't here and need advance notice.

2 THE CHAIRMAN: Right.

3 MR. COSMAN: If we were to say fix Friday  
4 at a certain time, that would clearly be after the  
5 re-direct that Mr. Freidin is going to be conducting.

6 THE CHAIRMAN: Okay. I think it would  
7 probably be advisable if we set a specific date, Mr.  
8 Freidin, and why don't set Friday morning at the outset  
9 and we will just interrupt whatever we are up to at  
10 that point in the evidence.

11 You will be in the middle of direct of  
12 Panel 10, so it really shouldn't matter at that point  
13 if we interrupted for a couple hours.

14 So we will start Friday morning probably  
15 at nine o'clock that and will be the commencement of  
16 the scoping session for Panel 11.

17 Was it the understanding of all the  
18 parties that we were going to be sitting until one or  
19 two o'clock on Friday?

20 FROM THE AUDIENCE: Yes.

21 THE CHAIRMAN: Okay. Well then, perhaps  
22 we better start at 8:30 on Friday and we will commence  
23 with the scoping session of Panel 11 at 8:30.

24 Anything else with respect to the  
25 schedule? Okay.

1                   Mr. Freidin, do you want to say  
2 something?

3                   MR. FREIDIN: All right. I just sort of  
4 have a few sort of remarks to introduce Mr. Armson's  
5 evidence which arises out of the undertaking which was  
6 given to the Ministry of the Environment last week.

7                   I have provided all counsel with the  
8 documents I'm going to give to the Board now and  
9 perhaps I should give them to you. I'm going to be  
10 suggesting that it be broken down into whatever the  
11 number is A, B, C, and D, four parts. So if I just  
12 give you those now (handed) --

13                  THE CHAIRMAN: That will be exhibit 430  
14 and then we will break it down into A, B, C, and D.  
15 And are you giving it to us in a particular order?

16                  MR. FREIDIN: I am but two of the  
17 documents are joined together. I think the exhibit  
18 should be -- they all relate to white pine stand on  
19 Partridge Lake and the first group of documents which  
20 will be 430A can just be described as records relating  
21 to that stand, various records.

22       ---EXHIBIT NO. 430A: Various records relating to white  
23 pine stand on Partridge Lake.

24                  MR. FREIDIN: 430B - the first two pages  
25 in the four-page document you have got there - there is

1 a map that has Peach or Shallow lake at the bottom,  
2 bottom left-hand corner, two pages, that would be 430B  
3 and is a University of Toronto site map.

4 Mr. Armson, if I make a mistake but in,  
5 please, with a key to that site map attached or a  
6 portion of the site map.

7 ---EXHIBIT NO. 430B: Two-page University of Toronto  
8 site map.

9 MR. FREIDIN: 430C, which is two pages in  
10 length, the first document is a portion of a map and it  
11 has got Cecebe Lake written in the bottom left-hand.  
12 So there is two pages and that document is a timber  
13 use -- pardon me, it is a portion of a Timber Use  
14 Capability Map with again a legend or an index  
15 attached.

16 ---EXHIBIT NO. 430C: Portion of Timber Use Capability  
17 Map.

18 MR. FREIDIN: And 430 sub-D -- or 430D is  
19 a portion of an FRI map flown or prepared in 1977?

20 MR. ARMSON: Prepared.

21 MR. FREIDIN: Prepared in 1977.

22 ---EXHIBIT NO. 430D: Portion of FRI map prepared in  
23 1977.

24 MR. FREIDIN: And for the record, Mr.  
25 Chairman, just to bring people back to what led to this

1 document being produced and the evidence which Mr.  
2 Armson is going to give in relation to it, it arose re:  
3 cross-examination by the Ministry of the Environment in  
4 relation to Exhibit 418K which was a photograph of a  
5 white pine stand that --

6 MR. ARMSON: Stump and--

7 MR. FREIDIN: White pine stump.

8 MR. ARMSON: --root system.

9 MR. FREIDIN: And root system which in  
10 fact was discussed by Mr. Armson in his  
11 evidence-in-chief.

12 MR. MARTEL: Did you say 419?

13 MR. FREIDIN: 418.

14 MR. MARTEL: 418.

15 MR. FREIDIN: And I believe that there  
16 were perhaps more than one photograph or slide that in  
17 fact dealt with that same site. Is that correct?

18 MR. ARMSON: Well, the one in particular  
19 was the one, and I will reshow that.

20 MR. FREIDIN: Okay. So with those  
21 comments, Mr. Chairman, perhaps I could turn it over to  
22 Mr. Armson.

23 THE CHAIRMAN: Very well.

24 MR. FREIDIN: Do you need the lights  
25 down?



1 MR. ARMSON: Yes. Mr. Chairman, the  
2 obtaining of these records was due to the efforts of  
3 Mr. Hynard working with the forestry staff at the  
4 Leslie Frost Centre and I would just like to put on  
5 record my appreciation for their doing that.

6 In addition, Mr. Hynard took some  
7 pictures of this existing stand and I thought if I were  
8 to show the 418K slide and then show you the area as it  
9 exists now, then I can go back to the records that have  
10 been entered as exhibits.

11 THE CHAIRMAN: Okay. Will you be  
12 producing a hard copy of this new slide at some point?

13 MR. FREIDIN: Yes, we will.

14 THE CHAIRMAN: Perhaps we should give it  
15 an exhibit number, Mr. Freidin.

16 MR. FREIDIN: Yes.

17 THE CHAIRMAN: Exhibit 431.

18 ---EXHIBIT NO. 431A: Slide depicting general view of  
19 white pine stand (Partridge  
Lake).

20 MR. ARMSON: Can you hear me, the  
21 reporter? It is easier if I can speak without holding  
22 the microphone?

23 THE COURT REPORTER: Yes.

24 MR. ARMSON: The Board will perhaps  
25 recollect last week that this was the picture of the

1 pine stump and the root system associated with this  
2 condition, which was a shallow condition with fractured  
3 bedrock.

4 The stand -- and this is the picture  
5 taken Thursday or Friday of this week by Mr. Hynard of  
6 that stand from the lake, Partridge Lake. And the  
7 Board may recall that I said there were two features to  
8 the location which we will look at on the map, but  
9 there were cottages on the lake and in this photograph  
10 you can see the one cottage sort of to the left about  
11 halfway up the picture right by the shore, and there  
12 was also a provincial highway that is not visible here  
13 but which passes by one side of the lake.

14 The stand that we are talking about, the  
15 white pine, is this stand that occupies the major part  
16 of the photograph. And it was within this stand, up on  
17 the ridge, that the photograph of the root system was  
18 taken.

19 MR. FREIDIN: Mr. Chairman, there are a  
20 number of photographs and perhaps we should mark them  
21 as 431A, B, C then.

22 THE CHAIRMAN: Very well. The first one  
23 is 431A. And how would you describe it?

24 MR. ARMSON: It is a general view of the  
25 white pine stand, Partridge Lake. And perhaps Mr.

1 Hynard can say when it was taken, what day.

2 MR. HYNARD: It was taken last Thursday  
3 afternoon about three o'clock.

4 MR. ARMSON: That was taken on Thursday  
5 afternoon.

6 THE CHAIRMAN: February 23rd?

7 MR. ARMSON: February the 23rd. And I  
8 presume all the pictures were taken that afternoon.

9 Yes, that's correct.

10 This is a second photograph taken at the  
11 shore of the lake, again to give some indication of the  
12 nature of the shoreline. And the Board can see very  
13 visibly the large bedrock outcroppings in here right at  
14 the shore in that situation.

15 MR. FREIDIN: 431B.

16 ---EXHIBIT NO. 431B: Slide depicting the shoreline of  
17 Partridge Lake with large bedrock  
outcroppings.

18 MR. ARMSON: The third one is a view  
19 taken within the stand, that is not from the shoreline  
20 but up into the interior of the stand, again to show  
21 the outcroppings of bedrock and the residual stand that  
22 exists there.

23 If the Board recalls in the picture 413K  
24 (sic), I had indicated that behind the stump there was  
25 an area of rounded bedrock with essentially just mosses

1 and so on. This would be one of those bedrock  
2 openings.

3 ---EXHIBIT NO. 413C: Slide depicting interior view of  
4 stand at Partridge Lake showing  
bedrock opening.

5 MR. ARMSON: Mr. Hynard dug around in the  
6 snow - there is approximately three feet of snow  
7 depth - looking for evidence of the cut. The cut was  
8 made in the winter of 1955 and '56. I indicated that  
9 it was two or more decades ago, it was 34 years ago --  
10 33, 34 years ago, and he uncovered a portion of a log  
11 and what had happened here was they had obviously cut  
12 -- severed the tree and found the butt log or part of  
13 it was -- as you can see from the hole, it was decayed,  
14 so they had butted it off, as we say, and left the  
15 portion that was unusable there and taken out  
16 presumably the rest of it.

17 So just an indication of the harvesting  
18 that had taken place there. The white pine tree to the  
19 right of that butted log in the background.

20 ---EXHIBIT NO. 413D: Slide depicting the harvesting  
21 that had taken place at Partridge  
Lake in 1955-56.

22 MR. ARMSON: This is a view in the  
23 interior of the stand showing, again, white pine and a  
24 number of -- first of all, the amount of woody shrub  
25 and some tree species that are growing in there, small



1 oak and some red maple.

2 As I indicated to the Board, the red  
3 maple can be found up on the shallow soils. This gives  
4 a view of the nature of the stand as it exists now, the  
5 interior.

6 ---EXHIBIT NO. 431E: Slide depicting the nature of the  
7 Partridge Lake stand as it exists  
now.

8 MR. ARMSON: I think, Mr. Chairman, that  
9 completes the slides.

10 THE CHAIRMAN: Okay. That will end with  
11 Slide 431E.

12 MR. ARMSON: I would like to direct the  
13 Board's attention to Exhibit 430B. This is a portion  
14 of a map dated 1955 and the title of the map is Site  
15 Map, the University of Toronto Forest, Blocks 1, 2 and  
16 3. And I perhaps should explain my connection with the  
17 map.

18 In 1951 the Department of Lands and  
19 Forests Division of Research completed the field work  
20 for this site map, that is the typing, and one of the  
21 first tasks I had during the early summer of 1951 was  
22 to walk over, not only the area shown in this map which  
23 is part of the university forest, but most of the  
24 university forest, and checking these various typings  
25 that had been carried out.

1                   The symbols essentially refer to two  
2     attributes. The first one, which is always the top  
3     one, is a number from theta to 9 and refers to what was  
4     interpreted or given the designation of moisture  
5     regime. This was a system of the Lake Angus Hills that  
6     has been used quite extensively by the Ministry, and  
7     although it is called a site map, the attributes  
8     primarily were those of an assessment of soil moisture  
9     condition called moisture regime, and a second one of  
10    the texture and depth of the soil materials, but the  
11    words texture were not used, it was referred to as pore  
12    pattern class.

13                   In essence, the moisture regime then was  
14    an assessment of the general ability of a soil to  
15    provide moisture; whereas the pore pattern reflected  
16    the fineness or coarseness of the soil materials and  
17    the depth in general terms. There were no absolute  
18    numbers indicated on the map.

19                   So that if you refer to the second page  
20    on Exhibit 430B and if you look under the category in  
21    the legend called moisture regime and pore pattern, you  
22    will see that the examples, the symbol example given  
23    there is a 0 within a horizontal line and beneath that  
24    a 2/9.

25                   What that means is that the soil

1 condition is considered to be moderately dry - these  
2 are generally descriptive terms - and that the soil  
3 materials consist of what are termed moderately open  
4 pore pattern. That would be, to give the Board some  
5 indication, something like a sandy loam texture and the  
6 meaning extremely restricted, in this particular area  
7 means bedrock.

8 So that it means that there is --  
9 essentially considered to be a moderately dry soil  
10 condition with a shallow surficial deposit of, in this  
11 case, coarser-textured materials over bedrock. So  
12 that's the way it was done.

13 The area in the -- if you refer to the  
14 same exhibit but the first part, the map, you will see  
15 on the northeast side of Partridge Lake a type that has  
16 the symbol theta/9 that's immediately -- and there is  
17 the indications along the shore of the lake that there  
18 is in fact a relatively steep slope down into the lake.

19 Highway 35 is the black line that crosses  
20 the portion of the map and, in particular, is  
21 immediately south of Partridge Lake. That is highway  
22 35, Provincial Highway 35.

23 So that these designations - as I say,  
24 the field work was completed in 1951 - these so-called  
25 theta/9 conditions were at that time viewed as, if I

1        may use the word, sensitive because of the fact that  
2        they were dry and were extremely restricted, the 9  
3        meaning essentially bedrock.

4                        During my tenure with the university I  
5        would spend normally three and four weeks each spring  
6        in this same area, normally with classes of students.  
7        And in the field work with other colleagues who were  
8        involved more in the management of a forest, we looked  
9        more closely at some of these areas, particularly at  
10       those areas that seemed to have productive stands and  
11       yet were on areas that had been classified in the  
12       mapping of sites as being ones that were, as I say,  
13       sensitive but very shallow.

14                      It was decided by the university staff  
15       that a logging operation could in fact be successfully  
16       completed in these types of stands - which were  
17       predominantly white pine, obviously therefore had the  
18       major market value.

19                      At that time, I do not recollect, I am  
20       quite sure there was not a management plan for the  
21       forest at that time, I am speaking now of the early  
22       1950's, but in 1955-56 the stand that I referred to  
23       here was logged and there was an individual marking of  
24       the white pine.

25                      At that time we viewed selection system



1 as being appropriate. And I don't remember the Mr.  
2 Baker, but if you go to the Exhibit 430A you will see  
3 the front page lists the volume of logs taken off in  
4 terms of species. The second page identifies the  
5 location in terms of the township, the operators, when  
6 it was cut, the numbers of pieces of wood and the total  
7 volume.

8 The cut summary is on the third page, but  
9 perhaps more importantly on the fourth page -- or  
10 pardon me, yes, on the fourth page, there is a map  
11 showing the location of the cut. It shows Partridge  
12 Lake and it shows the cut identified as 55.1. The 55  
13 standing for the year, the winter of 55-56; M. Foster,  
14 the name of the prime operator and the name of the  
15 lake.

16 The Board will note that that cut  
17 coincides to a very large degree with the area that was  
18 identified as theta/9. The volume of wood extracted  
19 was 37,00 board feet of which 25,619 were in white and  
20 red pine, so predominantly white and red pine. The  
21 other species of any consequence were red oak and  
22 poplar.

23 MR. FREIDIN: Is that information  
24 contained within that map?

25 MR. ARMSON: That is contained on page 1

1 of Exhibit 430A, the first sheet of A.

2 The second inventory of information that  
3 the Board has is 430C and it is a portion of a larger  
4 map, and that larger map is immediately behind me to my  
5 left. This is the map that had the title Site  
6 Capability of Physiographic Site Types, the University  
7 of Toronto Forest, southeast portion.

8 And what was done here was that the site  
9 map of 1955 which I referred to, which you have already  
10 seen, those sites were then looked at and given some  
11 rather general capability classes and the capability  
12 classes were related to what were called degrees of  
13 limitation.

14 Now, I am not clear and I am not sure  
15 that - certainly on the map it is not totally clear -  
16 as to the basis for the decision for the limitations,  
17 but essentially they were related to perceived climate,  
18 soil moisture, permeability and rooting depth, and  
19 these are identified on the right-hand side of the  
20 second page of Exhibit 430C.

21 If the Board compares the map for 430C  
22 with the preceding map of site classes which was 430B,  
23 you will note that the theta 9 type appears almost  
24 exactly with the symbol Gr.

25 MR. FREIDIN: Sorry, Mr. Armson, could

1       you just repeat that for my benefit?

2                       MR. ARMSON: Yes. If you compare the map  
3       of Exhibit 430B with the map for 430C, going to the  
4       northeast side of Partridge Lake, then the type that in  
5       430B is identified as theta/9 coincides virtually  
6       exactly with the type on 430C which is identified by  
7       this symbol Gr.

8                       And if you then look at the legend for  
9       the map of 430C, you will see that G refers to the  
10      extreme limitation - and I think it may be that the G  
11      isn't identified on that, it didn't reproduce - but if  
12      I could direct the Board's attention to the map, the  
13      legend -- the use capability class goes from A to G and  
14      those blocks which - and presumably another map have a  
15      color code - follow along so that G is the extreme,  
16      that is the bottom one in that legend. And R on the  
17      right-hand side of limitations says restriction due to  
18      bedrock.

19                      And note that this map was prepared --  
20      published in 1967 by Ministry staff, but it was based,  
21      as the Board can see, on the original site map.

22                      My involvement in this operation was one  
23      of knowing that it existed, having some input into the  
24      marking that went on and then it was customary for me  
25      particularly to return to those areas to look at the

1 conditions, particularly of soils, roots and so on and  
2 it was when I did this - and I cannot be exact about  
3 the date because the original slide covering is gone -  
4 but either in 1957 or '58, but I believe it would be  
5 '57, I examined a number of the root systems, one of  
6 which would be the one that I showed the Board there in  
7 this area and it became abundantly clear to me that the  
8 rooting ability of the pine, the productivity of the  
9 area had to be looked at in terms of not just a map  
10 symbol, but of the conditions that actually existed  
11 there.

12 I believe, Mr. Chairman, that's my  
13 explanation of the -- and I believe that covers  
14 essentially the request that Ms. Seaborn had for it.  
15 She did ask for a topographic map, Mr. Chairman.  
16 That -- we do not have copies of it, but I can read off  
17 the details of that map if you wish the precise  
18 location of Partridge Lake.

19 THE CHAIRMAN: Well, I don't know that it  
20 is necessary for the Board, unless you feel it is  
21 necessary to put it on the record, Mr. Seaborn.

22 MS. SEABORN: Perhaps we could just mark  
23 the topographical map as an exhibit so that we have it  
24 as part of the record.

25 THE CHAIRMAN: Okay. That would be



1 Exhibit 432. And can you give us a more detailed  
2 description of that map?

3 MR. ARMSON: Yes, I can, Mr. Chairman.  
4 It is the National Topographic Map, Haliburton, 31E-2  
5 at the scale of 1:50,000 and Partridge Lake has an  
6 easting of 74 on the map and a northing of 997.

7 ---EXHIBIT NO. 432: Map entitled: National  
8 Topographic Map, Haliburton, 31E-2  
at the scale of 1:50,000.

9 THE CHAIRMAN: Ms. Seaborn, do you have  
10 any questions arising out of that explanation?

11 MS. SEABORN: Mr. Chairman, I am going to  
12 have to consider the material further. Mr. Armson is  
13 going to be back again before MNR's case is completed  
14 and what I would like to do is reserve my rights to ask  
15 any questions on this portion until that time.

16 It may be that after considering it that  
17 I won't have any questions, so I prefer not to take the  
18 Board's time in asking questions now but reserve my  
19 rights to a later date.

20 MR. FREIDIN: Mr. Chairman, Mr. Armson is  
21 not going to be back until Panel 17 and I would hope  
22 that we could deal with this kind of evidence before  
23 17.

24 THE CHAIRMAN: Well, are you going to be  
25 around tomorrow at all or are you leaving today?

1                   MR. ARMSON: I will be around tomorrow,  
2     yes.

3                   THE CHAIRMAN: You will be?

4                   MR. ARMSON: Yes.

5                   MS. SEABORN: Mr. Chairman, tomorrow  
6     won't do it for me because it has to be reviewed by  
7     some other people. I have no problem in waiting until  
8     Panel 17 and, as I say, as we move along it may not be  
9     necessary to go back to his evidence in any event, but  
10    to accomodate Mr. Armson, I am quite prepared to wait  
11    until that time.

12                  THE CHAIRMAN: Okay.

13                  MR. FREIDIN: And it is not a hundred per  
14    cent sure that Mr. Armson will be on 17. I am sure we  
15    can work this out somehow.

16                  MS. SEABORN: Well, he is listed as being  
17    one of the witnesses in the evidence statement.

18                  MR. FREIDIN: Panel 17 is quite a way  
19    down the line and witnesses have changed in the past  
20    and might very well change in the future.

21                  THE CHAIRMAN: Well, we are going to be  
22    sitting in Toronto at some point during this case,  
23    probably the couple of days we mentioned in May -- or  
24    sorry, the 1st and 2nd of June, so there may be a  
25    possibility of seeing Mr. Armson again on special

1 request if necessary.

2 MR. FREIDIN: It is just that Mr. Armson  
3 feels that he has probably won the long-time Ministry  
4 witness award already and he doesn't really have to  
5 come back in 17 to win that.

6 MS. SEABORN: Well, if he is not coming  
7 back for 17 then I would ask that we somehow try and  
8 accommodate Mr. Armson's schedule and, for a short  
9 period of time, have him back if I require his  
10 presence.

11 MR. FREIDIN: Fine.

12 THE CHAIRMAN: Okay. Very well.

13 MR. FREIDIN: Mr. Chairman, if I can just  
14 ask...

15 ---Discussion off the record

16 THE CHAIRMAN: While we think of it - we  
17 were just discussing something else up here for a  
18 moment - when we are talking about witnesses visiting  
19 the Board, Friday perhaps after the scoping session, we  
20 would like to talk about Dr. Baskerville and how we are  
21 going to handle that whole situation because we really  
22 feel that at some stage of the game, if he is going to  
23 be coming as the Board's witness, the Board will be  
24 engaging counsel for that purpose and we should be  
25 getting in touch with Dr. Baskerville and giving him

1 ample time to prepare himself for that appearance.

2 So I do not think we are going to delay  
3 it much longer in terms of discussing the matter. We  
4 might as well do it right after the scoping session  
5 and take that time to attend to these housekeeping  
6 matters.

7 MR. FREIDIN: And if I just might ask Mr.  
8 Armson, you didn't refer to the Exhibit 430D which is  
9 the FRI map from 1977. I was just wondering if you  
10 could identify where this particular stand is and  
11 perhaps describe the attributes of that particular  
12 stand as reported in 1977?

13 MR. ARMSON: My apologies, Mr. Chairman,  
14 for not mentioning this, but if you look at the  
15 reproduction of the forest resources inventory map,  
16 1977, Highway 35 is the black line shown on the bottom  
17 and then Partridge lake is more or less centre -- lower  
18 centre part and the stand that is identified on this  
19 map as being the same area, virtually the same area is  
20 stand number, I believe it is 297, and you will see the  
21 symbol for that stand is immediately above the word  
22 Partridge and the symbol reads Pw7 and Or1 - and that  
23 is right on the boundary line, so it may be difficult  
24 to read - Ms1 and Bel.

25 And those numbers refer to the fact that



1 the stand is assessed to be 70 per cent white pine, 10  
2 per cent oak -- red oak, 10 per cent soft maple and 10  
3 per cent beach. And I believe the age-class is shown  
4 on the right-hand side, but that is the stand that is  
5 identified and you can see some similarity with the  
6 outline for the theta 9 class following the map that we  
7 have already discussed.

8 MR. FREIDIN: And if we just keep looking  
9 at that, if we follow the arrow that comes down to 297,  
10 sort of we trace that back up there - and it has got  
11 some other symbols there - can you just provide the  
12 information on those?

13 MR. ARMSON: Yes. That gives the age,  
14 the height, the degree of stocking - meaning the whole  
15 stand is 70 per cent stocked - and Site Class 2 and the  
16 area beneath that 16 is in hectares. So it is roughly  
17 32 and a half -- well, 16 hectares.

18 MR. FREIDIN: Thank you.

19 THE CHAIRMAN: Thank you.

20 Mr. Firman?

21 MR. FIRMAN: Good morning still, Mr.  
22 Chairman, Members of the panel -- Board. I would like  
23 to - I don't know if this is on. It doesn't seem to  
24 be. Is it on?

25 I would just like to introduce myself.

1 My name is Lorne Firman. I appear here on behalf of  
2 the Ontario Federation of Anglers & Hunters. I have  
3 attempted to become somewhat updated, Mr. Chairman,  
4 Members of the Board, but I must admit I think that is  
5 a gargantuan task at this point in time.

6 I would ask for your indulgences as we go  
7 through some of these things. I am sure the things you  
8 may say to me may be some of the things you have said  
9 to my predecessors. I will try to bear that in mind  
10 but at any rate, I am groping a little bit at this  
11 point.

12 Mr. Chairman, there are a couple of  
13 things I would like to deal with kind of  
14 administratively first, if I might. First of all, you  
15 referred to a scoping session on Friday and I don't  
16 think I or my colleagues are aware of exactly when this  
17 is, the time. Can you inform me of that?

18 THE CHAIRMAN: We are going to start off  
19 8:30 a.m.

20 MR. FIRMAN: 8:30. Thank you.

21 Secondly, Mr. Chairman, in my  
22 cross-examination of Mr. Armson, I would like to deal  
23 with some specific exhibits and I wondered if we could  
24 perhaps delineate those exhibits at the outset, it  
25 might be easier.

1                   First of all the Hydro Class  
2   Environmental Assessment which is Exhibit 255;  
3   secondly, there is a Exhibit 378, I believe it is, that  
4   is the Baskerville paper itself; and, thirdly, Exhibit  
5   382 which I understand is entitled: A Silvicultural  
6   Guide for Spruce.

7                   THE CHAIRMAN: Okay. Would you just run  
8   through those numbers quickly--

9                   MR. FIRMAN: Yes.

10                  THE CHAIRMAN: --because I don't think we  
11   have any of them.

12                  MR. FIRMAN: Certainly.

13                  THE CHAIRMAN: We will make arrangements  
14   to get them right away.

15                  MR. FIRMAN: Exhibit 255 is the Hydro  
16   Class EA.

17                  THE CHAIRMAN: Right.

18                  MR. FIRMAN: Exhibit 378 is the  
19   Baskerville paper and Exhibit 382 is the Silvicultural  
20   Guide for Spruce.

21                  THE CHAIRMAN: Okay. We have 382. We  
22   are missing the other -- I have 255 here.

23                  MR. FIRMAN: I tried to get those ahead  
24   of time, Mr. Chairman, but perhaps we didn't give Mr.  
25   Mander enough lead time in order to produce those,

1 but --

2

3 THE CHAIRMAN: We also have a page which  
4 is part of witness statement for Panel 2 page 2. Did  
5 you want that one as well? This is part of the  
6 curriculum vitae for Mr. Armson.

7 MR. FIRMAN: Yes, yes. I am sorry, we  
8 do, Mr. Chairman, if we could as well. That may be  
9 useful. It is page 2 of Panel 2?

10 THE CHAIRMAN: Yes. Now, is the  
11 Baskerville Report contained somewhere else.

12 DR. QUINNEY: Panel 8.

13 MR. FREIDIN: That is the last article,  
14 page 360 or 361 in Panel No. 8's witness statement --  
15 363.

16 THE CHAIRMAN: Okay. We are in business.

17 MR. FIRMAN: Thank you.

18 CROSS-EXAMINATION BY MR. FIRMAN:

19 Q. Mr. Armson, I would like to ask you,  
20 first of all, did you author any sections of the  
21 proposed Class EA at all, were you the author of any of  
22 those sections?

23 A. I reviewed them, I did not -- I was  
24 not the author in the strict sense of the word.

25 Q. You reviewed it after they had been



1 written by somebody else?

2 A. That is correct.

3 Q. And what happened as a result of that  
4 review; were any of them changed, to your knowledge?

5 A. They could have been, I honestly  
6 can't recollect specifics. There would be wording in  
7 there that I probably would have made some suggestions  
8 about.

9 Q. So you didn't get any feedback then  
10 as to the changes or recommendations you made as to  
11 what happened thereafter?

12 A. Oh, there would be feedback, yes, and  
13 there would be drafts. The document was prepared over  
14 some considerable period.

15 Q. Well, okay. I thought you said that  
16 you're not sure whether any of that was incorporated.  
17 Maybe I interpreted that incorrectly. Can you clarify  
18 that?

19 A. I would think -- yes, some was. You  
20 are asking me to go back. If you could be specific  
21 about items, I think it would be a better thing, but in  
22 general, yes, I made suggestions in general. Yes, some  
23 of those suggestions were adopted and some I presume  
24 were not.

25 Q. Well, it is a pretty weighty document

1 and I certainly don't have the depth to go back and  
2 look at individual sections myself, but nothing comes  
3 to mind specifically, then, is what you are saying at  
4 this point?

5 A. I can't -- just at this moment I  
6 can't think of anything very specific.

7 Q. All right, thank you. Do you have  
8 any specific training in environmental assessment?

9 A. No, not in the sense of this hearing.

10 Q. All right. Have you ever prepared  
11 any type of environmental assessment?

12 A. No.

13 MR. FIRMAN: Excuse me.

14 Q. What about -- you spent some time in  
15 some consultation with the MNR during your tenure at UU  
16 of T; did you have any introduction to environmental  
17 assessment during that tenure?

18 A. I was 26 years with the University of  
19 Toronto, not ten years.

20 Q. Right. No, I don't think I referred  
21 to ten. I realize it is quite long. Tenure I think I  
22 said.

23 A. Oh, I'm sorry, I apologize.  
24 Environmental assessment, no, I don't believe during  
25 that period the word -- term environmental assessment

1 was used.

2 Q. Relatively new term?

3 A. I would say, yes.

4 Q. How long would you say, in your  
5 opinion, it is a coining of a term or a phraseology, if  
6 I can use that?

7 A. Well, I believe that since the  
8 statute -- the Environmental Assessment Act in the  
9 mid-1970s, I believe that is the time at which, in the  
10 field of forestry, environmental assessment as a term  
11 became much more commonly understood.

12 Q. Okay. And during your consultations  
13 with the MNR which you did on an on-going basis, I  
14 understand; is that correct?

15 A. Are you referring to during my period  
16 with the Ministry?

17 Q. Yes, yes.

18 A. Or with the--

19 Q. Well, both I guess.

20 A. --university?

21 Q. Both. When you were with the  
22 university I understand that you also did some  
23 consulting work with the Ministry?

24 A. I believe that virtually every year  
25 in my professional career, to the present, I have had

1 some involvement with the Ontario Department of Lands &  
2 Forests and successor, the Ministry.

3 Q. And I just want to clarify, I think  
4 your answer in terms of the question: Did you have any  
5 specific training with the MNR in any of those  
6 capacities was that you did not?

7 A. No, that's correct.

8 Q. Now, you are familiar with the  
9 Environmental Assessment Act itself?

10 A. Generally familiar with it, yes.

11 Q. Okay. Can I ask: How did you become  
12 familiar with that?

13 A. By reading it.

14 Q. Okay. That is a pretty good start.  
15 Did you do anything else with it; any courses, seminars  
16 anything of that nature?

17 A. No, I was not involved in any courses  
18 or seminars as such.

19 Q. Okay.

20 THE CHAIRMAN: Do you think you  
21 understood it?

22 MR. ARMSON: Perhaps not as well as the  
23 Crown Timber Act, Mr. Chairman.

24 MR. FIRMAN: Q. That is unfortunate.  
25 Perhaps you could have helped us all, from what I



1 understand, Mr. Armson.

2 Now, I am, as I said Mr. Armson, a  
3 neophyte here and I am having a little difficulty in  
4 putting in a lot of what I have read into some  
5 perspective I guess that I understand in terms of  
6 significance.

7 And I wonder -- in that regard, I am  
8 having difficulty with some of the evidence in terms of  
9 the relevance; the relevance as to why we are here,  
10 what we are doing here, and where we are going.

11 Now, in that regard I would like to take  
12 you back to a portion of the transcript in an earlier  
13 panel.

14 THE CHAIRMAN: Well, I trust, Mr. Firman,  
15 that you are going to sort of do this review of an  
16 earlier panel rather expeditiously because we certainly  
17 don't want to repeat -- you must understand, we have  
18 been here now for something like 73 days' worth of  
19 testimony and during that time the Board and the  
20 parties have been led through a voluminous amount of  
21 evidence as to the purpose of this hearing, what is  
22 comprised in this environmental assessment and what  
23 matters the Board is looking at in terms of rendering a  
24 decision upon.

25 And we don't want to go back and revisit

1 or reinvent the wheel with respect to this application.  
2 So we will allow you to sort of very briefly indicate  
3 the point that you want to make out of this line of  
4 questioning, but we are not going to allow you to go  
5 back and rehash a lot of what we have already heard.

6 MR. FIRMAN: Okay. I have not had the  
7 benefit, Mr. Chairman, of having read all of the  
8 transcripts, so I think I know some of that to which  
9 you are referring. I don't think my cross-examination  
10 in this regard is going to be at length, let me put it  
11 that way.

12 I have some difficulty though, Mr.  
13 Chairman, in view of my friend Mr. Freidin's remarks  
14 that maybe or maybe not Mr. Armson might be back in  
15 Panel 17. Now, if he is not, then I suggest we have an  
16 obligation and certainly we should have the right to  
17 ask Mr. Armson at this point, on the basis that he  
18 might not be back, exactly where all of this fits.

19 THE CHAIRMAN: Well, you must appreciate  
20 though that Mr. Armson is not the sole witness giving  
21 testimony on behalf of the Ministry in this case. He  
22 has dealt with certain areas within the realm of his  
23 own expertise and he certainly, I don't think, is being  
24 put forward by the Ministry as being the be all and end  
25 all in terms of the entire application - with all due

1       respect, Mr. Armson - so that you can ask questions of  
2       him particularly in terms of the evidence that has been  
3       given by him, not necessarily evidence that has been  
4       given by others.

5                   MR. FIRMAN: Well, that's right and I  
6       understand, Mr. Chairman, and I think I accept that. I  
7       guess what I would like to refer to is perhaps by way  
8       of analogy more than anything else, although it does  
9       refer to a quote from one of the transcripts.

10                  THE CHAIRMAN: All right. Let's commence  
11       on this exploration and we'll see where it leads us.

12                  MR. FIRMAN: All right.

13                  Q. Mr. Armson, I don't know if you were  
14       present the time that Mr. -- my predecessor Mr.  
15       Armstrong was conducting your cross-examination, I  
16       believe of Mr. Scott, in Panel No. 8.

17                  A. I was not present.

18                  Q. Okay. If I can ask you then, I will  
19       read kind of the quotation to you that I would like to  
20       refer to. It is referred to in the transcript which is  
21       Volume 68 at page 11591 and Mr. Armstrong put the  
22       question this way:

23                         "If the Ministry of transport goes to  
24                         build a bridge or a process of bridge  
25                         building, it doesn't come before the

1 Board and give you a short course in  
2 civil engineering telling you how bridges  
3 are built. I believe it would tell you  
4 what impact on the water quality and the  
5 Physical areas the bridge might have and  
6 how that might impact on the  
7 environment."

8 And finally:

9 "It is not how to build a bridge or in  
10 this case how to manage timber."

11 The end of the quote that he put.

12 Now, the essence of that, I think, is the  
13 importance is not how to build a bridge and similarly  
14 here I suggest to you it is not how necessarily or  
15 solely to manage timber, but in fact there are other  
16 inputs that are equally as important.

17 Would you agree with that?

18 A. Yes, I would, but I wouldn't accept  
19 your analogy with a bridge and timber management.

20 Q. You wouldn't?

21 A. No.

22 Q. Why is that?

23 A. Well, a bridge is finite object and  
24 structure.

25 Q. Mm-hmm.



1 A. Timber management is a process.

2 Q. But the only parallel I suggest, Mr.  
3 Armson, is this: When you build a bridge you must take  
4 into account all of those environmental effects as  
5 well; when you are going through this kind of a process  
6 or a timber management plan, equally I suggest you must  
7 take into account all of those environmental aspects.

8 A. That is my understanding.

9 Q. That is the point we are trying to  
10 make. Okay.

11 The difficulty is, in dealing with that  
12 concept of a bridge, it is not important to know how to  
13 build the bridge; what we are trying to determine is,  
14 in that sense, what impact that bridge being built is  
15 going to have on the other variables, the other  
16 environmental concepts.

17 Similarly here, I suggest, that is what  
18 we are trying to do or that is important as well.  
19 Would you agree with that?

20 A. Yes, but I would point out that a  
21 bridge is a finite structure.

22 Q. Well, I understand that. I  
23 understand that, and I suppose a tree is a pretty  
24 finite structure too; is it not?

25 A. No.

1 Q. Well, okay. I know what you are  
2 referring to, but at one point when you cut it down it  
3 is pretty finite?

4 A. The environment around it isn't.

5 Q. Well, I understand that, I understand  
6 that, and I understand the process of renewal as well,  
7 but you can look at a tree as a finite object in that  
8 sense too if you wish; could you not?

9 A. Only when it is dead and then it is  
10 not finite.

11 Q. Well, when it is cut it is obviously  
12 going to be dead; isn't it, that is the purpose?

13 A. Then it decays and it is no longer  
14 finite.

15 Q. Sure, or it may be used if it is cut  
16 too.

17 A. Yes.

18 Q. Sure. Mr. Armson, what about the --  
19 are you familiar with the differences between what is  
20 referred to as a class and an individual environmental  
21 assessment?

22 A. Yes, generally, I believe.

23 Q. Okay. Can you -- sorry. Can you  
24 maybe delineate for us what you understand that  
25 difference is?

1 MR. FREIDIN: Well, Mr. Chairman, if he  
2 wants the view of a layman on that particular matter, I  
3 suppose he can have it, but I wanted to indicate that  
4 that question has a lot of legal overtones and I think  
5 that perhaps there are many of us in this room who  
6 realize that, as we go along dealing with this first  
7 environmental assessment into a class environmental  
8 assessment, that that may be a bit of a moving  
9 sometimes illusive target, but that is one of the  
10 reasons we are here.

11 THE CHAIRMAN: Mr. Armson, whatever your  
12 answer will be to this question, would you indicate to  
13 the Board whether or not you are giving it in a context  
14 of what a class environmental assessment might be under  
15 the Environmental Assessment Act?

16 MR. ARMSON: Yes. My general  
17 understanding would be that a class assessment would  
18 cover either a series of structures or areas and  
19 certain activities but grouped together; whereas an  
20 individual one would be for a specific location,  
21 specific structure. That is the general sense of my  
22 understanding.

23 MR. FIRMAN: Q. Mr. Armson, your entire  
24 witness statement deals with the concept in the main, I  
25 would suggest, of silvicultural and, to some extent,

1 with forest ecology; is that right?

2 A. That's correct.

3 Q. Can you indicate to us where that all  
4 fits into this environmental assessment hearing, how  
5 you consider what you see as the relevance of that in  
6 terms of its fit or integration?

7 A. Well, first of all, the practice of  
8 silviculture is a major part of the whole broader one  
9 of timber management - in fact it is one of the major  
10 areas - and in the practice of silviculture, which is  
11 the manipulation of existing stands of timber,  
12 management of forest lands, a knowledge of the  
13 components of that forest land and the vegetation and  
14 the processes that are involved in the -- the  
15 biological processes as well as the physical and  
16 chemical processes, forms really a basis for really the  
17 practice of silviculture, the two are intertwined.

18 Q. Well, you are trying to tell the  
19 Board through all of that, as I understand, the whole  
20 concept of harvesting, renewal and maintenance; is that  
21 right?

22 A. That is correct because they are  
23 significant parts of timber management.

24 Q. Okay, indeed. Now, where -- I don't  
25 think you have dealt to any great extent that I can



1 recall in that witness statement with the impact of the  
2 environment in that regard.

3 A. Well, I would suggest that the  
4 nutrient cycle and the hydrologic cycle are extremely  
5 good examples of the relationships and, therefore,  
6 possible impacts.

7 Q. What about some of the impacts on  
8 wildlife, fish, things of that nature?

9 A. Yes, I have indicated that too.

10 Q. Did you?

11 A. But I am not competent to speak to  
12 the wildlife nor to the fishery and, therefore, did not  
13 deal with them in detail.

14 Q. In detail.

15 A. I just referred to them.

16 Q. I am still at a loss to kind of  
17 understand why it is important for this Board to know  
18 essentially how to grow and how we can best deal with  
19 that forest as opposed to the environment.

20 MR. FREIDIN: Well --

21 MR. ARMSON: Well, timber management  
22 deals with the processes of forests and their growth  
23 the maturing and ultimately their death and the way  
24 they are utilized. And if that isn't dealing with a  
25 large substantial part of the environment - not all of

1       it, I admit - then, it seems to me, I am speaking off  
2       base.

3                   MR. FIRMAN:  Q.  Well, perhaps that is  
4       the case, I am not sure.  If we were dealing here with  
5       a -- I asked you about the difference or  
6       differentiation between a class environmental  
7       assessment and an individual environmental assessment.

8                   If we were dealing with an individual  
9       environmental assessment for a specific timber  
10      management plan, how would you view your evidence then  
11      before a Board; would you view it the same way, the  
12      same weight?

13                  A.  I cannot speculate.  The situation is  
14      not presented to me except in that hypothetical way.

15                  Q.  Well, would it be any different than  
16      what we are dealing with here?  It shouldn't be any  
17      different; should it?

18                  A.  Presumably it might deal only with  
19      that area, but that is not really a question I really  
20      can answer at this stage.

21                  Q.  Okay.

22                  MR. FIRMAN:  Excuse me a minute.

23                  Q.  Okay.  Mr. Armson, I want to go on to  
24      deal with the concept.  What we are trying to deal with  
25      or present here is the details of timber management,

1 timber management and their application in what might  
2 be referred to I guess as an intimate relationship  
3 between the undertaking and the environment.

4 Do you agree with that, understand that?

5 A. That is what the whole hearing --

6 Q. Yes.

7 A. Yes.

8 Q. And so you agree with that..

9 A. Yes.

10 Q. Okay. Can you perhaps delineate in  
11 your words just how you understand that, how you see  
12 that process?

13 A. Well, would you -- which process are  
14 you now talking about; the process of the assessment  
15 and hearing, or are you talking about biological  
16 processes or --

17 Q. Yes, the whole process of the  
18 relationship between the undertaking and the  
19 environment, this timber management process.

20 A. Well, I am sorry, but -- how do I see  
21 the relate -- it's related and I really have difficulty  
22 with your question. How do I see the relationship, in  
23 what respect do you...

24 Q. How does it interact; how does the  
25 cutting of timber, the development of a timber

1 management plan interact --

2 THE CHAIRMAN: Mr. Firman. Mr. Firman,  
3 if I might interrupt. The application is brought under  
4 the provisions of the Environmental Assessment Act.  
5 Surely we have to look at the Act to see what the  
6 definition is of environment and it's set out quite  
7 precisely in the Act under the definition section.

8 We are dealing with not only the natural  
9 environment but the social, cultural and economic  
10 environment as well and we are dealing, in this case,  
11 not with a site-specific, project-specific type of  
12 application, but a Class EA--

13 MR. FIRMAN: Yes.

14 THE CHAIRMAN: --involving four basic  
15 activities: harvesting, access roads, renewal and  
16 maintenance which occur across the area of the  
17 undertaking, perhaps in some cases, a similar manner, a  
18 repetitious fashion and that is why, as I understand  
19 it, we are approaching this particular application on a  
20 Class EA basis.

21 And it is not site-specific to a  
22 particular area, although I am sure when dealing with  
23 some of these specific activities which we are  
24 assessing there will be specific examples given of the  
25 considerations taken into account and perhaps examples



1 given of actual roads or actual stands harvested and  
2 that kind of thing. We have had heard some of that  
3 already.

4 Now, to ask the witness a broad general  
5 question as to what relationship the application for a  
6 timber management planning process has to the  
7 environment, I think is -- in the context of what has  
8 gone on at this hearing and what we understand will  
9 happen for the remainder of the hearing, not all that  
10 helpful.

11 MR. FIRMAN: Well, I just wanted to get  
12 his views, Mr. Chairman. I understand what you are  
13 saying and what you have indicated to me. I think  
14 if -- I guess I would put it that if Mr. Armson feels  
15 that he can't deal with that question, then perhaps he  
16 should say so.

17 THE CHAIRMAN: Well, if the gist of your  
18 question, quite frankly, is: Are we going to be  
19 looking at the impacts of timber management on other  
20 values other than timber values, I think the answer to  
21 that is quite clearly yes. Why, because we have to  
22 some extent dealt with that already. We have  
23 indications that the following panels, such as Panel 10  
24 dealing with harvesting, is also going to contain  
25 evidence dealing with the impact of harvesting on other

1 forest values.

2 MR. FIRMAN: I understand.

3 THE CHAIRMAN: So there is absolutely no  
4 question of what you are trying to get at, that this  
5 application would just involve impacts to the forest  
6 without taking account of other values, whether it be  
7 tourism, wildlife or other things. And I think it is  
8 wasting, to some extent, the Board's time to go at the  
9 root of what is in this application because we have  
10 already been led to believe, by a lot of evidence that  
11 has come in, that some of these other values are  
12 definitely going to be canvassed.

13 That is the basis, I can assure you, of  
14 at least four or five of the other parties to this  
15 application's interest in the matter before us.

16 MR. FIRMAN: I understand that, and I  
17 have looked ahead in terms of the other panels, so I  
18 understand what you are saying.

19 THE CHAIRMAN: But I don't think what you  
20 have looked at a hundred per cent, with all due  
21 respect, is what has gone on in the panels we have  
22 covered, 1 through 9.

23 MR. FIRMAN: I have not indeed, Mr.  
24 Chairman, I haven't had the opportunity or the time to  
25 review all of that.

1                   THE CHAIRMAN: And we can appreciate  
2                   that. All we are saying is, is that I think the Board  
3                   to some extent is aware of the breadth of the  
4                   application before it. I think, if I might presume,  
5                   some of the other parties are as well.

6                   Unfortunately, you are coming in at a  
7                   stage which is quite a ways a long in terms of the  
8                   proponent's case, in fact we have been through - if I  
9                   might it this way - the theoretical part, we have been  
10                  through the so-called learning curve as to how the  
11                  Ministry manages in the past and the theory about the  
12                  forest itself, its ecology et cetera. What we are  
13                  going to get into very shortly are the specific  
14                  activities under consideration.

15                  and I don't think, again, we should be  
16                  spending a lot of time on reviewing some of the  
17                  theoretical aspects of the application at this stage.  
18                  If you don't feel that it has been handled properly, at  
19                  least your client, you will have an opportunity at a  
20                  later stage to bring in your own evidence to say that  
21                  this environmental assessment application has been  
22                  handled incorrectly.

23                  MR. FIRMAN: Well, I can probably shorten  
24                  a lot of that up, Mr. Chairman, and just ask Mr. Armson  
25                  then if he would agree that basically it is very

1       difficult, in fact it may be impossible, to separate  
2       timber management from environmental planning.

3                   Q.   Do you agree with that?

4                   A.   From environmental planning?

5                   Q.   Yes.

6                   A.   I don't know what you mean by  
7       environmental planning.

8                   Q.   Well, what would you understand by  
9       that?

10                  A.   I don't know.

11                  Q.   You don't know what environmental  
12       planning might be?

13                  A.   No.

14                  Q.   Well, everything under the  
15       Environmental Assessment Act.

16                  A.   Well, if it is everything then I  
17       can't deal with it because I can't deal with --  
18       planning relates to specified attributes, be they  
19       management, timber or so on. I don't honestly know  
20       what you mean by environmental planning except in a  
21       very, very general sense.

22                  Q.   Well, okay. That is why I am asking  
23       you to perhaps zero in on it.

24                  A.   Well, that is what...

25                  Q.   Tell me what you understand by it.



1                   A. I have already said, I don't know  
2 what you mean by it except in a most general sense. I  
3 understand when people talk about timber management,  
4 water management, wildlife management, those are all  
5 attributes I can understand, but environmental  
6 management I don't.

7                   Q. Okay. Well, let's refer to those  
8 attributes then that you just mentioned. Would you  
9 agree that you can't separate timber management from  
10 those other concepts?

11                  A. From the concepts --

12                  Q. Of water management, animal  
13 management.

14                  A. They are inter-related, yes.

15                  Q. Yes, they are all inter-related?

16                  A. Yes.

17                  Q. Okay.

18                  THE CHAIRMAN: And that, if we might add,  
19 is the subject of integrated resource management to a  
20 certain extent.

21                  MR. FIRMAN: Indeed.

22                  THE CHAIRMAN: Which is what we have  
23 heard about from at least two panels of witnesses.

24                  MR. FIRMAN: Okay.

25                  Q. I think some of the previous

1 testimony from the Ministry of Natural Resource' people  
2 was in fact that it is virtually impossible, for  
3 example, to separate timber management from, as an  
4 example, wildlife management.

5 Would you agree with that?

6 MR. FREIDIN: Well, Mr. Chairman, is  
7 counsel suggesting that he is actually referring to  
8 some evidence?

9 I mean, we have been around the horn on  
10 this a couple of times. The Ministry of Natural  
11 Resources approaches the management of the natural  
12 resources for which it has responsibility in a fashion  
13 that was described in detail. They have individual  
14 resource management plans for individual resources and  
15 that they take into account the other values of the  
16 environment in the manner described throughout the  
17 evidence.

18 That's the approach the Ministry of  
19 Natural Resources takes. And the rationale for that  
20 has been explained in earlier evidence. I think we are  
21 starting to repeat Panel 1 again.

22 THE CHAIRMAN: Well, it certainly wasn't  
23 evidence given by this witness, in any event.

24 MR. FIRMAN: No, that's right. It was  
25 some of the other evidence, and I just wondered if he

1 was aware of that, Mr. Chairman. I asked him if he was  
2 aware of it, that's all.

3 MR. ARMSON: Yes, I am aware of it.

4 MR. FIRMAN: Q. Okay. Do you agree with  
5 that concept?

6 A. Yes.

7 Q. Okay.

8 THE CHAIRMAN: Mr. Firman, I think we are  
9 going to consider breaking at this point, we are going  
10 to have to break for lunch -- you are obviously going  
11 to be some time this afternoon, so I think we will  
12 break for the lunch hour until two o'clock, if I might  
13 interrupt at this point.

14 Thank you.

15 MR. FIRMAN: All right.

16 ---Luncheon recess taken at 12:30 p.m.

17 ---Upon resuming at 2:00 p.m.

18 THE CHAIRMAN: Thank you. Be seated,  
19 please.

20 Mr. Firman?

21 MR. FIRMAN: Yes. Mr. Chairman and  
22 Members of the Board, I have consulted with my client  
23 and consultants during the lunch hour and I think a lot  
24 of the evidence that -- or the witness statement that  
25 Mr. Armson has put in, a lot of it has been covered and

1 much of it will be covered in the future once again,  
2 probably in more depth and more detail.

3 We are cognizant of the fact that we  
4 don't want to unduly delay the process any more than is  
5 necessary and that it is going to be some time yet in  
6 the future before this is wound up.

7 So with all that in mind, we don't intend  
8 to ask any further questions of Mr. Armson at this  
9 point.

10 THE CHAIRMAN: Very well. Thank you, Mr.  
11 Firman.

12 We expect you to be ready to go, Mr.  
13 Freidin, in about thirty seconds.

14 MR. FREIDIN: I am very happy to leave,  
15 Mr. Chairman.

16 THE CHAIRMAN: All right. Obviously this  
17 is a bit unscheduled in terms of you were expecting not  
18 to be reached until much later this afternoon, if not  
19 tomorrow morning.

20 Having said that, the Board really does  
21 not feel very disposed towards taking off for the rest  
22 of the afternoon and we are wondering if you could be  
23 given perhaps an hour, if you could start your  
24 re-examination and at least deal with some of the  
25 testimony that arose out of last week having the night



1 to finish off with what Ms. Seaborn dealt with today.

2 MR. FREIDIN: All right. I think I can  
3 deal with some of the matters that came up last week.  
4 I haven't fully developed a re-examination in relation  
5 to some of what happened last week because I knew we  
6 would be touching on it again, but --

7 THE CHAIRMAN: Well, we won't restrict  
8 you necessarily to just covering what happened last  
9 week this afternoon. If there is something tomorrow,  
10 after reviewing it tonight, that you want to ask about  
11 in re-examination that also occurred last week, I think  
12 under the circumstances the Board will allow that  
13 latitude.

14 MR. FREIDIN: I think I might have about  
15 an hour's worth of re-examination, but I would like  
16 about a half an hour just to review it, get things in  
17 order and perhaps add something to it.

18 THE CHAIRMAN: All right. Well, we are  
19 suggesting perhaps we come back at three and then you  
20 can do as much as you can this afternoon and we will  
21 end when you feel it is necessary to end and pick up in  
22 the morning.

23 MR. FREIDIN: Okay. I think I can do  
24 some. Okay.

25 THE CHAIRMAN: Thank you.

1 ---Recess taken at 2:07 p.m.

2 ---Upon resuming at 3:00 p.m.

3 THE CHAIRMAN: Thank you.

4 Mr. Freidin?

5 RE-DIRECT EXAMINATION BY MR. FREIDIN:

6 Q. Mr. Armson, you were asked some  
7 questions by Mr. Cosman about erosion.

8 A. Yes.

9 Q. And you agreed with Mr. Cosman that  
10 the variables which affect erosion are soil texture,  
11 slope, whether the forest floor is in tact and input  
12 rate. What did you understand Mr. Cosman to mean by  
13 input rate?

14 A. The input rate I assumed was a term  
15 used to measure the input rate of precipitation because  
16 the erosion is dependent on water movement and I had  
17 used the word input in the diagram in -- or the figure  
18 in the evidence package to indicate input from  
19 precipitation.

20 So the rate of rainfall, if you like,  
21 would be my interpretation.

22 Q. Thank you. In cross-examination by  
23 Ms. Swenarchuk, she asked you whether there are sites  
24 which are not infinitely resilient. You agreed with  
25 her, and could you just advise: What do you mean by

1 the phrase infinitely resilient?

2 A. Well, they can withstand essentially  
3 high -- the impacts of various forces to a very high  
4 degree. And I guess in answering that question my  
5 example would be granite bedrock, not striated or  
6 fractured, impervious. Just -- one could rain on it,  
7 frost, snow, ice, fires and there might be some small  
8 change, but that's very resilient material.

9 MRS. KOVEN: But you can't grow trees on  
10 it, Mr. Armson?

11 MR. ARMSON: On that kind of a situation,  
12 I don't think -- there might be some moss, but there  
13 wouldn't be much else on that one.

14 MRS. KOVEN: Was the question about  
15 infinitely resilient sites for forests that grow?

16 MR. ARMSON: Well, over time, over a very  
17 long period of time - and I think we do have have some  
18 limited examples - there is very slow accumulation of  
19 organic material and you get vegetation there. It is  
20 what I call a boot strap situation where it builds up.

21 And that certainly then becomes a  
22 situation where you certainly wouldn't find normally  
23 even commercial forest, but if you did, you would be  
24 very, very careful in the way you dealt with it.

25 MRS. KOVEN: I guess I am getting

1        confused. I thought infinitely resilient referred to  
2        commercial forest sites where you could harvest forever  
3        and it would always be resilient enough to reproduce  
4        forests?

5                    MR. ARMSON: Well, I wasn't thinking of  
6        it in that term, but there is a...

7                    MR. FREIDIN: Q. All right. But just  
8        following along from that, in terms of a site that's  
9        out there where you have commercial trees and it is a  
10       site that you are carrying out timber management.

11                   A. Yes.

12                   Q. Would you - and you may have to  
13        define again what you mean by infinitely resilient -  
14        but would you say that any of those sites are  
15        infinitely resilient?

16                   A. Well, I wouldn't say they were  
17        infinitely. They are sites that are extremely  
18        resilient and, again, if one were to strip them and do  
19        a series of other things in terms of bulldozing off all  
20        the organic matter even on -- those sites will -- well,  
21        in our situation, erosion will take place.

22                   But if you do not do that, then they are  
23        very resilient in terms of revegetating and producing  
24        and maintaining their productivity.

25                   Q. Thank you. There was a lot of



1 discussion during the cross-examination regarding  
2 full-tree harvesting.

3 A. Yes.

4 Q. And its effects or potential effects  
5 on the nutrient status of the site. My question is  
6 that, aside from a concern that somebody might have  
7 about nutrients, are there any silvicultural  
8 objectives, the achievement of which would be furthered  
9 by the absence of slash left on the site because the  
10 site had been full-tree harvested?

11 A. Well, there is silvicultural  
12 objectives, yes, in terms of the regeneration of that  
13 area and the ease with which it may be accomplished and  
14 indeed, to some degree, the effectiveness of that  
15 activity.

16 Q. Can you give me an example of where  
17 not having the slash would in fact have that effect?

18 A. Well, certain forms of site  
19 preparation and also the artificial regeneration by  
20 planting would be made easier by the removal of slash.

21 Q. And could you advise me whether that  
22 sort of information would be provided in a  
23 silvicultural guide, and perhaps we could use the  
24 spruce working group guide as an example?

25 A. There is reference, I believe, in the

1 section dealing with site preparation as to the general  
2 nature of that activity.

3 Do you have any very specific -- are you  
4 referring particularly to full-tree harvesting in  
5 relation to site preparation?

6 Q. If there is a specific one that you  
7 are aware of that deals with full-tree harvesting,  
8 perhaps if there is one there that deals with an  
9 indication that the absence of slash is a condition  
10 which would be advantageous?

11 A. Can you just give me a moment to look  
12 through see...

13 Q. Perhaps if I can -- rather than have  
14 you go all the way through there, just let me refer you  
15 to a page, Mr. Armson, and tell me whether this is an  
16 example. Page 51, the last full paragraph:

17 "Full-tree harvesting reduces the amount  
18 of slash left on the site minimizing the  
19 need for and the cost of subsequent site  
20 preparation. Sites with heavy growth of  
21 woody vegetation, including many white  
22 spruce stands, usually require some form  
23 of site preparation prior to planting or  
24 seeding even with full-tree logging.

25 However, the cost of site preparation is

1 usually considerably reduced."

2 Would that be an example?

3 A. Yes, that would be an example.

4 Q. Thank you. Now, Exhibit 429 were the  
5 lists -- the interrogatories which were filed by the  
6 Ministry of the Environment.

7 A. Yes, I have that.

8 Q. Would you turn to Interrogatory No. 9  
9 for Panel 10. I think it is the last interrogatory in  
10 the pile.

11 A. No, I don't... Yes, I have that now.

12 Q. If you will just take a moment -- or  
13 take a look there and the Ministry of the Environment  
14 asked, in relation to those studies, whether there were  
15 ones upon which MNR placed particular reliance in  
16 support of the statement which was made about full-tree  
17 harvesting.

18 A. Yes.

19 Q. And you have three reports identified  
20 under the second column as being ones which were  
21 particularly relied upon by the Ministry.

22 A. That's correct.

23 Q. Are you aware of the reasons that the  
24 Ministry of Natural Resources has placed particular  
25 reliance on those three reports as opposed to the other

1 ones?

2 A. Yes, there are two very specific  
3 reasons that I can give. One is that in the three  
4 papers that were identified they very clearly, in the  
5 papers, describe the methodology by which the sampling  
6 was done, not only for the forest but also for the  
7 soils, quite specific. And this is important when you  
8 consider the data that are produced to understand what  
9 the basis is for the sampling, these samples are then  
10 dealt with physically or chemically by analysis.

11 And those three papers in particular very  
12 clearly identified that, and if I might say to the  
13 Board, my own experience and that of any soil scientist  
14 recognizes that the sampling procedures, particularly  
15 for soils, is extremely important.

16 The second reason is that those three  
17 papers, in particular, No. 1 - that was not included,  
18 the Foster and Morrison 1982 - did not conform to this  
19 in the same way, but the three with the Xs there were  
20 all published in scientific journals in which all  
21 submissions undergo a peer review.

22 Q. Which ones were published in  
23 scientific articles which undergo peer review?

24 A. The three with an X beside them; the  
25 Foster and Morrison of 1987, that's No.2; the Morrison



1 and Foster No. 4; and the one of Weetman and Webber,  
2 No. 6.

3 Q. Could you please explain what peer  
4 review means and why that would cause you to put more  
5 reliance on those reports as opposed to those that did  
6 not have peer review?

7 A. Well, in science it is most important  
8 that the studies that are undertaken be subjected to a  
9 rigorous review to ensure that in fact the studies, and  
10 particularly the results and the conclusions that are  
11 made by the authors, in fact can withstand the  
12 criticism, if you will, of their peers.

13 And this is, I believe, a common practice  
14 throughout the scientific world and one in which,  
15 certainly in the academic world, a great deal of  
16 emphasis is placed.

17 Q. Thank you. During the  
18 cross-examination by Ms. Swenarchuk, the Chairman  
19 raised a question of the recent forest fires in  
20 Yellowstone Park and he indicated that someone had  
21 indicated to him that following the fire in Yellowstone  
22 Park the forest came back as a healthier forest than it  
23 was before, since it was over-mature at the time of the  
24 fire.

25 THE CHAIRMAN: I don't think it has come

1 back yet, Mr. Freidin. That was just this past summer,  
2 I believe.

3 MR. FREIDIN: All right.

4 Q. Can you advise whether fire control  
5 has had any effect on the present age-class  
6 distribution of the forests within the area of the  
7 undertaking; are you able to comment on that?

8 A. Well, in certain areas we certainly  
9 have minimized the occurrence of natural fire and  
10 restricted it and, therefore, compared where those  
11 fires would have been natural fires and they would have  
12 burned much larger areas than we -- that's the aim of  
13 our fire prevention program.

14 Q. And can you indicate whether that has  
15 had any -- has it evolved in the age-class distribution  
16 and, if so, how?

17 A. What that does then, if you reduce  
18 the extent of natural fires, then automatically you are  
19 generally shifting, bringing into play a set of  
20 processes where stands that would normally have been  
21 burnt and regenerated are not and, therefore, they  
22 become older.

23 Q. Thank you.

24 A. Now, the fire may burn young stands  
25 too, it doesn't pick and choose particularly.

1 Q. Thank you. Now, Ms. Swenarchuk was  
2 dealing with a certain topic - I haven't got the  
3 topic - but she decided to sort of switch gears and go  
4 back to something that she had discussed before. She  
5 said: I want to go back to the discussion of fragile  
6 sites and full-tree logging.

7 A. Yes.

8 Q. All right. So the question that  
9 arose that I am going to refer you to came after that.

10 And in relation to that type of site,  
11 that's a fragile site, she described certain sites as  
12 being fragile, you didn't agree that you would use that  
13 word, but in relation to those kinds of sites that she  
14 was talking about, she was asking you questions about  
15 the benefit of having revegetation occur on the site in  
16 order to prevent or minimize the leaching of nutrients.

17 Do you remember that line of questioning?

18 A. Yes, I do.

19 Q. She asked you - and I have got it  
20 done as closely as I can - she said: If you have a  
21 situation where herbicide is used prior to planting,  
22 presumably revegetation will be reduced. And you  
23 answer: Reduced, yes. You stand by that answer?

24 A. Yes.

25 Q. Why would herbicides be -- just

1 generally speaking, would why would herbicides be  
2 applied to a site prior to planting?

3 A. They would be applied prior to  
4 planting in order to reduce the competition, the  
5 competing vegetation, to reduce the extent of competing  
6 vegetation for the newly planted seedlings.

7 Q. Okay. Now, is competition a problem  
8 on all sites?

9 A. It is a particular problem on the  
10 more productive, more fertile and moisture sites.

11 Q. And when you say a more fertile site,  
12 does that indicate anything about whether that is a  
13 site -- does that have any relevance as to the nutrient  
14 status of the site?

15 A. Yes, it would be sites that I think  
16 would be generally considered very rich in nutrients.

17 Q. Thank you. Ms. Swenarchuk stated a  
18 rhetorical-type question, she said: You don't consider  
19 erosion of nutrients serious on bedrock sites.

20 And you answered: Where there is an  
21 organic mat of mosses that can dry out and erode, you  
22 said you have a concern.

23 Could you advise whether there are any  
24 methods available within timber management which could  
25 prevent an organic mat of mosses from drying out and



1       eroding?

2                   A. Yes, by the manner in which the stand  
3 is harvested; it can be harvested in such a way to  
4 minimize that. In fact, the silvicultural guide  
5 specifically deals with that.

6                   Q. Have you got an example in mind?

7                   A. Yes, in the -- where there is, for  
8 example, that type of situation you may restrict the  
9 size of the openings for the harvested area.

10                  Q. By...

11                  A. Well, by such things as strip -- what  
12 we call strip clearcutting; in other words, to maintain  
13 a side protection.

14                  Q. And could you turn to page 47 of the  
15 silvicultural guide. Do you have that?

16                  A. Yes, I have that.

17                  Q. Let's go down to the second full  
18 paragraph, that is under the heading Strip Cutting. It  
19 says:

20                         "The technique is usually a two-cut  
21 system in which alternate strips are left  
22 to supply seeds to the cut area to  
23 protect the seedbed from drying effects  
24 of the sun, wind and temperature."

25 Is that a statement which could apply to the example

1       that you gave?

2                     A.   Yes.

3                     Q.   In that situation, where does the  
4       moss fall; what part of that sentence does it fall  
5       into?

6                     A.   Well, it falls into -- the drying  
7       effects of the sun are referring to the drying effects  
8       on the soil and the vegetation and, therefore, the moss  
9       some time.

10                    Q.   And can the moss be a seedbed?

11                    A.   Yes.

12                    Q.   And this strip cutting is  
13       clearcutting?

14                    A.   That's correct.

15                    Q.   Thank you.   Could I have you turn to  
16       Panel No. 10 witness statement at page 340.

17                    A.   Yes, I have that page.

18                    Q.   Now, you were asked certain questions  
19       about certain portions of the article which are found  
20       on page 340, and during your evidence I think you  
21       pointed out that the section that those quotations were  
22       in was one which deals with an area larger than  
23       Ontario; is that right?

24                    A.   Yes, I believe so.

25                    Q.   It deals with the Canadian Shield

1 Forest from Quebec west to Saskatchewan?

2 A. Right.

3 Q. Ms. Swenarchuk quoted to you the  
4 portion of the article which starts in the third full  
5 paragraph about seven or eight lines down, right at  
6 margin: "As aspen...."

7 A. Yes, I have that.

8 Q. I just want to read this. She said:  
9 "As aspen and birch are not suitable  
10 for river movement because of sinkage and  
11 are of less value for pulp, these species  
12 have traditionally been left uncut in  
13 pulpwood operations. This has led to the  
14 conversion of stands from softwoods to  
15 mixed woods over large areas of the  
16 boreal forests."

17 You answered the statement that that was generally  
18 true.

19 Can you tell me, in Ontario since 1981  
20 when this article was written, has the utilization of  
21 poplar changed?

22 A. Yes, it has increased very  
23 dramatically.

24 Q. Can you advise; where in fact it has  
25 increased, the utilization of it has increased, has

1       that had any effect on the amount of residuals left in  
2       mixed wood stands?

3                   A.   It has reduced the amount of  
4       residuals in mixed wood stands.  If I might, this  
5       sentence dealt with an historical period when river  
6       drives were used.  That is not the case.

7                   Q.   Can you advise whether the reduction  
8       in the amount of residuals has had any effect on the  
9       ability to artificially regenerate some of these mixed  
10      wood stands?

11                  A.   Very considerable effect, since one  
12      of the key problems in regenerating these areas with  
13      softwoods was the residual stands, not only their  
14      physical presence in terms of impeding the equipment,  
15      but also the regeneration of particularly the aspen  
16      that formed, in fact, a competing -- was a strong  
17      competitor.

18                  Q.   Poplar is not utilized, however,  
19      everywhere across the area of the undertaking, equally  
20      utilized?

21                  A.   No, that is correct.

22                  Q.   All right.  So are there still sites  
23      where it is not utilized where you still have problems  
24      in terms of, with residuals affecting your ability to  
25      regenerate the site?



1                   A. There is still areas, but I would say  
2                   that from my knowledge that the area -- large areas of  
3                   the boreal in the present area of the undertaking the  
4                   utilization of poplar has reached proportions where  
5                   many of those areas that were difficult to regenerate  
6                   are now having poplar utilized.

7                   Q. Okay, thank you. The same article  
8                   same page, she quoted another section to you and the  
9                   section is the next full paragraph.

10                  I will read to you the portion that she  
11                  read before you answered starting in that fourth full  
12                  paragraph:

13                         "There has been relatively little  
14                         reforestation on the annual cut-over of  
15                         about 500,000 hectares in this region.  
16                         Softwood growth has often been slow to  
17                         establish, uneven in size and often  
18                         covered by brush. The succession and  
19                         dynamics of fire-origin forests to which  
20                         the tree species are adapted by the  
21                         presence of fuller partially serotinous  
22                         cones in jack pine and black spruce are  
23                         not the same after logging."

24                  I am not sure I got that right. Anyway, you followed  
25                  along there, Mr. Armson?

1 A. Yes.

2 Q. You answered - and I think I got you  
3 down correctly again without the transcript here - I  
4 don't agree completely. In Ontario, considerable  
5 silviculture in Ontario is directed towards jack pine  
6 and black spruce and he is making a very general  
7 statement and I want to relate this comment to Ontario.  
8 It is a general statement and I would not agree it  
9 applies to all areas and, in Ontario, there are many  
10 exceptions.

11 And I would like to ask you: Why did you  
12 disagree with the general statement and what are some  
13 of the many exceptions that you were referring to?

14 A. Well, first of all, a statement,  
15 particularly the last sentence, when taken in the  
16 context of 500,000 hectares of cut-over which apply to  
17 the region - this is not Ontario, this is larger -  
18 suggests that in fact, because the dynamics "are not  
19 the same", therefore, there is not a regeneration of  
20 black spruce and jack pine; when in fact in Ontario, as  
21 the Board I believe saw from the survey of artificial  
22 regeneration, nearly up to the period of 1974 the  
23 artificial regeneration of jack pine has been  
24 singularly effective and successful.

25 And black spruce was really --

1 considering the period that was being studied, I would  
2 say it was quite successful, too.

3 Q. And when you say the period studied,  
4 you are referring again to the SOARS?

5 A. To the SOARS Report, yes.

6 Q. Thank you. Okay. Some questions  
7 about - and I don't think people need this - but about  
8 that graph--

9 A. Yes.

10 Q. --Harvest Cut Versus Regeneration  
11 Treatment on Crown Lands. There was some  
12 cross-examination on that chart and that chart  
13 displayed the difference between the area harvested and  
14 the area which was the subject matter of a regeneration  
15 treatment on Crown land.

16 A. Correct.

17 Q. The area between the two lines, it  
18 was agreed, was the area which was harvested but had  
19 not received a regeneration treatment.

20 A. That's correct.

21 Q. Now, in cross-examination from Ms.  
22 Swenarchuk you gave an example of an area and the  
23 example you said was an area of aspen poplar which was  
24 cut. The silvicultural prescription was to let it  
25 regenerate to poplar.

1 A. Yes.

2 Q. And the prescription was for  
3 clearcut.

4 A. Yes.

5 Q. Now, in that case you would have a  
6 clearcut and you would have no silvicultural treatment;  
7 is that correct?

8 A. That's correct.

9 Q. Would that area, where you had  
10 clearcut, intended to get poplar back and you obtained  
11 successful natural regeneration of poplar be included  
12 in the area shown on that table as an area which hadn't  
13 received a regeneration treatment?

14 A. Yes.

15 Q. So just so I am clear then, the area  
16 where it's shown that no regeneration treatment has  
17 been received does not necessarily mean that you have  
18 not regenerated a desirable commercial species?

19 A. That's correct.

20 MR. FREIDIN: Just a moment, Mr.  
21 Chairman.

22 Q. All right. In cross-examination  
23 today by Ms. Seaborn she asked you some questions about  
24 soil surveys and she posed a question -- or wanted to  
25 get your comment on the statement that soil survey maps



1 are not special surveys for specific activities such as  
2 harvest. And you agreed, you said: Correct.

3 A. That's right.

4 Q. Can you advise me, however, whether  
5 any of the soil surveys which are produced and used by  
6 foresters for making silvicultural decisions surveys  
7 which were prepared for timber management? Can you  
8 advise me whether some of those were?

9 A. Yes.

10 Q. And you haven't been here through the  
11 whole hearings, but can you advise me of just some of  
12 the soil surveys that have been prepared specifically  
13 for use by foresters in timber management?

14 A. Yes. The Pitapeeko Crown management  
15 unit in the Hearst District was surveyed and a portion  
16 of the area east of Cochrane was also surveyed and the  
17 Plonski Forest has had a survey. Those were soil  
18 surveys done specifically for the purposes of timber  
19 management in its broadest sense.

20 Q. We heard evidence in Panel 7, and I  
21 think perhaps from you in Panel 3 or 4, about a  
22 survey -- or I am always afraid -- I didn't want to use  
23 the word survey here - I think it was a survey called  
24 FLAPPS.

25 A. Oh yes, northeastern region had a

1 major survey of soil materials. It was at a somewhat  
2 different scale. That is another example. You asked  
3 for some examples, there are others too, specific ones.

4 There has been a survey I believe done --  
5 a specific one in the Espanola District some years ago  
6 and there were some surveys I believe made in the  
7 northwestern region. There is a whole host of them.  
8 They are listed I believe in a catalogue.

9 Q. Okay, thank you. Ms. Seaborn was  
10 asking you some questions again today about the use of  
11 discretion by foresters and she was talking about  
12 situations where somebody might be wondering about  
13 nutrients being preserved on certain sites.

14 And she said: If there is no general  
15 rule, the foresters will have to look at a number of  
16 factors and decide when soil is too shallow; and you  
17 answered: Yes. She said: Foresters may exercise  
18 their discretion differently; you answered: Yes.

19 Is it unusual for professionals to differ  
20 on how to deal with a given set of circumstances?

21 A. In my experience, yes.

22 Q. In terms of the differences -- sorry,  
23 in terms of differences between professional foresters,  
24 can there be more than one solution to a certain set of  
25 circumstances all of which can be correct in terms of

1 silviculture and environmental protection?

2 A. Yes.

3 MR. FREIDIN: Those are the only  
4 questions I have for today, Mr. Chairman.

5 THE CHAIRMAN: Very well.

6 MR. MARTEL: Could I ask Mr. Armson just  
7 one question. In your dealing with the public over the  
8 years, has one of the major concerns expressed by the  
9 public not been the amount of slash left lying around?

10 MR. ARMSON: No, strange -- not in my  
11 experience in, for example, both talking to the public  
12 and showing them pictures and also being out with them  
13 in situations where there was some slash, that didn't  
14 seem to be one of their concerns and I found that  
15 strange too.

16 I believe that if you were to go to some  
17 of the other jurisdictions, particularly British  
18 Columbia, I think you would find maybe a different  
19 answer. But slash per se has not been something that  
20 the general public has made it known to me that that  
21 was a major concern.

22 MR. MARTEL: On the whole question of  
23 slash and nutrients left in the ground, would you think  
24 that more -- over the next number of years that we  
25 should be doing a number of studies to make sure that

1 we don't deplete, if we are going to use full-tree  
2 harvesting, we don't deplete the nutrient, do we have  
3 enough material, or should we still be looking at it  
4 very, very carefully?

5 MR. ARMSON: And I think I may have  
6 indicated this to the Board. I believe there is a real  
7 need to document what are the materials that are  
8 removed in full-tree harvesting.

9 I think as I indicated most of the  
10 studies, for good reason, in fact are studies whereby  
11 the investigator goes into the stand that has been or  
12 is likely to be, and then selects and samples out the  
13 trees and takes them out.

14 Now, that is quite different from the  
15 machinery and equipment going in and harvesting and, as  
16 I indicated, at different times of the year you could  
17 get totally different numbers, if you like, the  
18 quantities of debris.

19 Anyone who has seen full-tree harvesting  
20 going on in the wintertime will see the breakage of  
21 limbs and so on to a far greater degree than anything  
22 that occurs in the summer. And I think this is a very  
23 significant factor.

24 Much of the material that comes off, and  
25 not only dead limbs but a lot of the fine limbs, finer



1 limbs with the foliage on it, not all by any means but  
2 there is a significant amount, and I think that is  
3 important.

4 MR. MARTEL: Thank you.

5 THE CHAIRMAN: Okay, Mr. Freidin,  
6 tomorrow you are going to commence first thing in the  
7 morning, we will start at 9:00 a.m. and I understand  
8 that you may have a couple of hours' worth?

9 MR. FREIDIN: I think that is correct.

10 THE CHAIRMAN: Now, what are we going to  
11 do for the rest of the day? Will you be prepared to  
12 start with Panel 10 and if not, why not?

13 MR. FREIDIN: I can tell you better  
14 tomorrow morning because, to be quite frank with you,  
15 Mr. Chairman, when tomorrow morning comes I may be  
16 standing here without very much sleep and I don't know  
17 whether I can put in another full day, and that is the  
18 truth and that is the main reason for not being able to  
19 tell you whether we can go a full day tomorrow.

20 THE CHAIRMAN: Well, are your witnesses  
21 going to be here?

22 MR. FREIDIN: Yes, sir.

23 THE CHAIRMAN: And do you not have -- I  
24 mean, this is a fairly comprehensive panel in terms of  
25 the subject matter you will be addressing?

1 MR. FREIDIN: That's correct.

2 THE CHAIRMAN: And I imagine it is going  
3 to go on for a few days, even in direct. How long do  
4 you estimate the direct examination to be?

5 MR. FREIDIN: Very difficult, but I have  
6 been telling everybody an average of a day a witness.  
7 Some witnesses won't take a day, but some are going to  
8 take more, and so I'm saying six working days.

9 THE CHAIRMAN: Six working days. And you  
10 don't think you will be in a position to at least put  
11 in a few hours of those six days tomorrow?

12 What we are concerned about is: The  
13 Board and the parties arriving in Thunder Bay, and we  
14 realize that obviously in any of these lengthy cases  
15 there is going to be adjustments that have to be made  
16 from time to time, but what we are finding over the  
17 last three or four weeks is that we are missing and  
18 wasting a lot of valuable time, in some cases - and  
19 this isn't meant to be critical of you in any way, Mr.  
20 Armson - but in some cases a witness can't be here on a  
21 certain day, so we automatically have to shorten the  
22 week from what is originally anticipated.

23 On other occasions we have run out of  
24 evidence some time mid-afternoon and rather than try  
25 and start another panel or go into cross-examination,

1 we have sort of broken early and gone on to the next  
2 day. And we are somewhat concerned that it is just  
3 taking a long time in terms of the amount of hours we  
4 have available, and yet many of them are not being used  
5 productively.

6 And we are up here and all the parties  
7 are up here, and we can't, frankly, do much else while  
8 we are up here other than break at 3:30 today and wait  
9 until tomorrow and if we go two hours tomorrow and you  
10 finish your re-examination, what do we do for the rest  
11 of the day?

12 I am not saying you are not doing  
13 anything here, I'm saying the parties aren't.

14 MR. FREIDIN: No, I am saying we may very  
15 well be able to go ahead and I am not going to make an  
16 undertaking that I am going to be in a position to go  
17 ahead for the reasons I have indicated. And I think  
18 unfortunately for me, I have a problem which is truly  
19 quite the opposite of the Board. When the Board has,  
20 you know, time when there is basically perhaps nothing  
21 else to do; my problem is that I have nothing else to  
22 do except prepare, and that time gets to be extremely  
23 onerous.

24 And I am being frank with the Board and  
25 that is the reason I am not going to make an

1       undertaking, I'm going to keep my options open and I  
2       would like to address that tomorrow.

3                   THE CHAIRMAN:   Okay.   We will deal with  
4       it tomorrow.

5                   I would like it to be clearly stated on  
6       the record, except for the days when the Board cannot  
7       sit - and it is indicated and will indicate as far as  
8       possible in advance of those days - we are up here to  
9       try and expedite the hearing of this application.   I am  
10      not suggesting that other parties aren't, including the  
11      Ministry --

12                   MR. FREIDIN:   Mr. Chairman, I was on the  
13      Royal Commission dealing with Fire Safety in High-Rise  
14      Buildings and Judge Webber always said -- he said, you  
15      know, let's get going, he said, the lights are on.

16                   So I know where you are coming from, and  
17      I respect your concern.

18                   THE CHAIRMAN:   Okay.   Nine o'clock  
19      tomorrow morning.

20      ---Whereupon the hearing adjourned at 3:40 p.m., to be  
21          reconvened on Wednesday, March 1st, 1989, commencing  
22          at 9:00 a.m.

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